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Annual Progress report of forest administration for the year ending 31st March 1880

Year: 1880

Sub: Forests/ Annual Report

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FOREST REPORT, OUDH CIRCLE, 1879-80.

ERRATA.

Para. 6.—*For* "136" in Bareilly *read* "137" both columns.

For total "1,071" *read* "1,072."

For total "1,078" *read* "1,079."

Para. 9.—Bareilly "28½" figures indistinct.

Bahraich 3rd line "105."

Para. 19.—6th line after "felled," a comma instead of a fullstop.

Para. 21.—*For* "up right" *read* "upright."

Para. 24.—Clause 5, *for* "5 15," *read* 51·5.

Cost	...	794
Para. 28.—Gorakhpur, note Ramgarh Receipts	...	6,186
Surplus	...	5,392

Para. 33.—End of 5th line omit the comma.

Para. 36.—Note Kheri Division includes Bhira Sub-division Trans-Sarda Sub-divisions and Bahramghát, the latter being the selling depôt of the Trans-Sarda Sub-divisons.

Para. 37.—Explanation I: *for* "Patua" *read* "Patna."

Para. 41.—2nd clause, *for* para. "38" *read* "39" and again in 3rd clause.

Para. 42.—Note 9th line, *for* "cant" *read* "can."

NAINI TAL:
The 13th August, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle.

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CENTRAL CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION,
FOR THE YEAR ENDING 31st MARCH, 1880.

By O. Greig, Esq., Conservator of Forests, Central Circle.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

The Central Circle now comprises all the Government Forests in the Kumaun, Garhwál, Bijnor, Jhánsi, and Lalitpur districts, also the Pattri forest in the Saháranpur district, and the leased forests of Native Garhwál which lie to the east of the watershed between the rivers Jumna and Bhágirathi.

2. The change proposed in para. 51 of last year's annual report, but modified to the following extent, was carried into effect on the 1st December, 1879:—

The *Garhwál* division is now composed of blocks I., II. and VI. of the old Garhwál division and the Bijnor forests; the *Ganges* division comprises blocks III., IV. and V. of the old Garhwál division and the leased forests of the old Bhágirathi division: the Chandi forest has been left under charge of the Collector of Bijnor and is worked by him as a sub-division of the Garhwál division.

3. **Naini Tal Division.**—Mr. Braidwood, Assistant Conservator, was in charge throughout the year, with the exception of the few weeks, 2nd September to 10th October, he was on leave, during which period Major Campbell held charge in addition to his other duties.

4. **Ranikhet Division.**—Mr. Brereton, Deputy Conservator, was in charge all the year with the exception of 2½ months, 5th January to 19th March. During his absence Mr. Braidwood held charge in addition to his other duties.

5. **Kumaun Division.**—Major Campbell, Deputy Conservator, was in charge throughout the year.

6. **Old Garhwal and Bhagirathi Divisions.**—Mr. Grant, Officiating Deputy Conservator, was in charge of both divisions up to the 17th November, 1879, the date of Mr. O. Greig's return from leave. Mr. O. Greig then took charge of the Bhágirathi division. On the 1st December, 1879, the redistribution of these two divisions came into force, as stated in para. 2, and from that date to the close of the year Mr. O. Greig was in charge of the Garhwál division, and Mr. Grant of the Ganges division.

7. I visited all the above-mentioned divisions during the year except the Bhágirathi, but was unable to spend more than a few days in the Kumaun division. During November I inspected the plantations of the Aligarh division of the main Ganges canal, and reported on the plantation on reh soil near Sikandra Rao as requested by Government. During December I made a tour through the waste lands of the Etáwah and Agra districts and submitted a report on them as requested, and on the 1st of January I was obliged to take three months' leave to England. The Oudh circle was placed under my charge, in addition to my own duties, for three months, from the 27th August, 1879, during Captain Wood's absence on leave, and Captain Wood had charge of the Central Circle, in addition to his own, during my absence.

II. 1.—AREA, BOUNDARIES, SURVEYS, WORKING PLANS, &c.

8. **Naini Tal Division.**—The correct area has not yet been furnished by the Survey Department, nor have the maps been published.

Eighty-eight acres of village land were purchased for Rs. 1.344 under the terms of the Land Acquisition Act.

The outer boundaries are all demarcated.

The village lands have also been demarcated, and the pillars will be handed over to the village headmen as soon as possible.

Mr. Dausey was engaged in valuing the forests of this division during the summer and autumn of the year under report. His work was made over to the School Circle in September last, and will probably be reported on by Captain Bailey.

9. **Ranikhet Division.**—No alteration has been made in the area, the correct area will be given when the maps are completed.

The outside boundaries are all demarcated.

The Extra Assistant Commissioner did not finish the settlement of the village lands within the forests until May, 1880, and for this reason the Forest Survey Department was unable to complete the survey. Pillars are now being erected round these lands, so as to be ready for the survey by next autumn.

The Deputy Conservator valued the north-east portion of the Ránikhet reserved forest, see appendix A. The enumeration valuation of the whole of that forest has now been completed, and Mr. Brereton is arranging the data in the hopes of being able to draw up a working plan during the recess season.

An enumeration valuation of the Tetalikhet protected forest (about 3,360 acres) was made by Mr. Blanchfield, Forest Ranger, attached to the Kumaun Division, during the autumn, see appendix B.

10. **Kumaun Division.**—The area remains unaltered.

The following boundary work was done during the year :—

In blocks 1 and 3 the areas which are open for the exercise of recorded rights have been demarcated by pillars, 60 in all; the (*b*) portion of block 4, and the part of the (*a*) portion of block 4, which is above the Barmdeo road have also been demarcated by pillars. These boundaries will be further demarcated by paths.

In the Haldwáni working circle of block 4 thirty-five pillars were erected on the southern forest boundary, and seven on the northern, also 19 to demarcate village lands.

In the Chorgalia working circle portion of block 4 twelve pillars were built on the southern forest boundary, eight to demarcate the Chorgalia depôt ground, and 35 to demarcate village lands.

The sites of the village lands boundary pillars, and of the pillars on the northern boundary were fixed by an Assistant Commissioner on the authority of the Commissioner of the Division.

The sites of the southern boundary pillars of block 4 were selected by the Deputy Conservator and the Assistant Superintendent of Forest Surveys, and approved by the Commissioner, and the pillars have all been surveyed and entered in the Forest Survey maps.

In western Kumaun the demarcation work is almost entirely completed with the exception of the village lands, but there is a good deal yet to be done in eastern Kumaun.

An Assistant Commissioner was deputed by the Commissioner last winter to settle the boundaries where necessary, and I presume he will continue the work next winter.

11. **Garhwal Division.**—The approximate area of this division is as follows

		Square miles.
No. 1 block of the old Garhwál Division	...	237
No. 2 ditto ditto	...	180
No. 6 ditto ditto	...	1
The Chandi forest of the old Bijnor division	...	62
The Rehar ditto ditto	...	25
Total square miles	..	505

The Assistant Conservator (Mr. O. Greig) could not find time to visit the whole of the outer boundaries (he took charge of the division on the 1st December, 1879), and therefore he is unable to say whether they are properly demarcated according to the written description or not. He hopes to visit them all during the current year, and to beable to state in his next annual report that they are all sufficiently demarcated.

Twenty-seven out of 33 plots of village lands, the boundaries of which were settled by an Extra Assistant Commissioner during 1879, were demarcated; but the Assistant Conservator was unable to demarcate the remaining six plots for various reasons, such as not finding the Extra Assistant Commissioner's marks, the map being doubtful, illegal destruction of forests by the villagers, &c., &c. These matters will all be settled during the current year.

The demarcation of the portions of the reserved forests which are left open for the exercise of recorded rights has been commenced, three of these forests have been marked off by pillars, and the remainder will be demarcated during 1880-81. To make these boundaries distinct and unmistakeable a path will be constructed from pillar to pillar, which will also be very useful for inspection, and, in some cases, for export of forest produce.

The enumeration valuation work mentioned in para. 11 of last year's report was handed over to the Conservator of the School Circle in September, 1879.

12. **Ganges Division.**—The approximate area of this division is as follows :—

		Square miles.
No. 3 block of the old Garhwál division	...	17
No. 4 ditto ditto ...	...	36
No. 5 ditto ditto ...	...	88
Total square miles	...	141

and also the whole of the leased forests which formerly constituted the Bhágirathi division, the area of which is not accurately known. Mr. Grant did nothing at all towards demarcating the village lands within his division or the portions of reserved forests which are left open for the exercise of recorded rights, so this work remains for his successor—Mr. Grant having been allowed a year's furlough on medical certificate since the close of the year under report.

The outer boundaries of the division are demarcated.

II. 2.—PROTECTION AND IMPROVEMENT.

13. **Naini Tal Division.**—No alteration was made in the establishment.

Six cases of breaches of forest rules, in which nine persons were involved, were brought into court; convictions were obtained in four cases involving four persons, but one was let off on appeal. One hundred and eighty-nine jampanies and others were fined Rs. 190 for various petty offences.

After an inspection of the plantations I have decided that several which were entered in the 1878-79 Form No. 46 are not yet sufficiently advanced or complete

to be so entered; and therefore they will not appear in this year's form. The only two plantations which are complete, and a decided success, are the Ayarpatha Oak plantation, five acres, and the Jábar Deodar plantation, 140 acres. The following is a detail of the plantation work during the year, which cost Rs. 577 :—

Cheena Forest.—Planting 2,102 deodar transplants.

Shading and weeding deodars.

Planting 700 horse chestnut transplants.

Sowing 253 seed patches with walnuts.

Sowing 3,646 ditto ditto pinus excelsa.

Sowing 3,360 ditto ditto quercus incana.

Jabar Forest.—Weeding 140 acres of deodar plants.

Maulani Forest.—Sowing 7,005 seed patches with quercus incana.

Badalj Forest.—Sowing 5,370 seed patches with ash.

Sowing 3,400 ditto ditto quercus incana.

Kahala Forest.—Planting 3,500 walnut transplants.

Sowing 262 seed patches with walnuts.

Lower Kahala Forest.—Sowing 1,554 seed patches with quercus incana.

Chatrani. Forest.—Sowing 2,963 seed patches with quercus incana. These sowings and plantings are all on denuded areas in the forests, which were cleared many years ago for timber, fuel, charcoal burning, or potatoe cultivation.

For the last five years we have been working to get rid of the extensive potatoe cultivation which used to be allowed in the Naini Tal forest, and I am glad to be able to report that it is now entirely stopped.

The road to Mauláni (called the Lohar Kot road), 3 miles and 53 chains long, and 5 feet wide, was completed at a cost of Rs. 420.

All existing roads were repaired.

A small ranger's hut was built in the Sherkadanda forests, which cost Rs. 271.

Two large iron-roofed sheds, for storing timber and charcoal for sale in Naini Tal, were commenced.

14. **Ranikhet Division.**—There was no change in the permanent establishment.

The Deputy Conservator writes : " There were 31 cases of breaches of forest rules, 10 were tried by the Cantonment Magistrate and 21 were disposed of by me. They were all small cases."

No new road was constructed. All existing roads were kept in good order, and the fences round closed forests were repaired where necessary. The following is a copy of Mr. Craw's report on nursery and plantation work :—

" The several kinds and quantities of seeds sown during the year are as under :—

Name.	packets.	lbs.	Source and remarks.
Acacia dealbata	...	3	Forest Department, Madras, failed.
" Melanoxylon ...	...	19	Ranikhet, vegetated freely.
Eucalyptus sideroxylon ...	...	1	Australia, ditto.
" varieties ...	4	...	Dr. King, very few seeds vegetated.
Pinus Schwinkiana ...	1	...	Forest officer, Naini Tal
" Cembroides ...	1	...	Indent No. 89, dated 27th May, 1879, of these seeds two of P. Schwinkiana and 3 of P. Cembroides only vegetated.
"			
Abies Sibirica	1	...	Abies Sibirica failed.
Pinus excelsa	5	22	Forest Department, Chakrata, germinated very freely.
Ash	...	100	Forest Department, Naini Tal, vegetated freely.
Horse chestnut	...	300	Doonagiri ditto ditto.
Apricot	...	76	Nursery orchard. ditto ditto.
Pear	...	4	Local ditto ditto.
Peach	...	13	Ditto ditto ditto.
Cherry	...	8	Ditto ditto ditto.
Deodar	...	2	Ditto ditto ditto.

"I regret to have to state that the Acacia seed received from Madras and sown at Dalmoti, March 1879, failed altogether. The weather proved very dry and in consequence scarcely a seed germinated. The seed appeared good and I can attribute its failure only to the dry weather that succeeded."

"Some seed of Acacia Melanoxylon which I saved from trees in the station garden and sowed at Dalmoti and Jákhdeo in August, germinated very freely, but I am sorry to say a large breadth got eaten by locusts in November. Where the plants were eaten over the ground has been resown this spring, and the seed is now coming up."

"5. The heavy snow in February, nearly two feet deep, was most destructive to the gum trees, large and small. Only the very small ones in nursery lines and completely covered with snow escaped injury. I think, having regard to the often-occurring heavy snow we have here, and how hurtful it is to these trees, that it would be advisable to wait and see how those succeed that are planted before putting out more in the forests. The plants in the nursery could be utilized in the lower forests of the station where much snow does not fall and by householders who desire to plant quick-growing trees."

"The following table shows the planting done in the forests during the year:—

Forest.	Deodar.	Alder.	Ash.	Sweet chestnut.	Acacia.	Total.
Dalmoti	125	3,158	507	...	...	3,790
Jainoli	7,705	...	...	...	...	7,705
Sarsema	4,800	...	...	...	...	4,800
Kilkhet	...	...	...	524	...	524
Buchyara	...	...	...	245	...	245
Kunyari	10,675	...	1,040	...	...	11,715
Korali	...	...	1,307	...	...	1,307
Ghingaru Khal	2,500	...	...	...	...	2,500
Jakhdeo	20	...	...	...	44	64
Total ...	25,825	3,158	2,854	769	44	32,650

"In addition, a number of large Pinus excelsa growing too close together at Jainoli were transplanted during the rains. Where the soil is favourable this pine makes very rapid growth, and as it is not at all difficult to transplant, it appears a very desirable one for Ranikhet."

"The weather, during both rains and cold weather being favourable, the trees mostly have done well; of the 769 sweet-chestnuts planted at Kilkhet and Buchyara only 33 appear to be dead, but some of these will perhaps yet throw up from the roots."

"The following is a list of forests and fruit trees distributed during the year:—

Particulars.	Deodar.	Horse chestnut.	Walnut.	Gum.	Willow.	Miscellaneous.	Total.
1st.—*Forest trees.*							
To the Executive Engineer, Ranikhet ...	744	100	404	...	100	...	1,348
" Cantonment Magistrate, Do. ...	600	1,000	1,000	...	30	...	2,630
" Station Staff Officer, Naini Tal ...	30	705	605	100	...	...	1,440
" Officer Commanding, Almora ...	50	25	...	...	...	25	100
" Forest Department, Naini Tal ...	...	...	3,500	...	...	...	3,500
" Householders	715	60	138	85	55	747	1,800
Total ...	2,139	1,890	5,647	185	185	772	10,818

Particulars.	Apple.	Pear	Apricot.	Plum.	Cherry.	Peach	Miscellaneous	Total.
2nd.—Fruit trees.								
To Colonel Johnstone, Political Agent, Munipur ...	10	4	2	3	8	4	14	45
Householders and villagers ...	624	113	374	291	310	21	203	2,236
	634	117	376	294	318	25	217	2,281
								10,818
Total number distributed ...								13,099

"The revenue derived by sale of fruit is as under :—

	Rs.	a.	p.	Rs.	a.	p.
By 21 seers 4 chittacks of cherries at Re 1 per seer ...				21	4	0
„ 4 maunds 39 seers of apricots at 12 annas per seer ...				149	4	0
„ 5 „ 23 seers of apples at 12 annas per seer ...	167	4	0			
„ 9 „ 29 ditto ditto 8 annas per seer ...	194	11	0			
„ 1 „ 27 ditto ditto 4 annas per seer ...	16	15	3			
	378	14	3			
Deduct commission 10 per cent. paid to Messrs. Bell and Son	15	15	0	362	15	3
Rs.				533	7	3

"There is promise of a good crop of apples, apricots and plums this year, but the cherry blossom did not set well.

"The stock of forest and fruit trees in the nursery is as follows, *viz* :—

1st Forest.		
Deodar	130,130	
Walnut	78,000	
Horse chestnut	29,626	
Oak	9,416	
Willow	5,642	
Picea Smithiana	1,419	
Pinus insignis	207	
„ gerardiana	16	
A. Pinsapo	286	
Cypress	2,209	
Eucalyptus, sorts	3,746	
Miscellaneous	2,411	263,521
2nd Fruit.		
Apple grafts	788	
„ stock	3,867	
Pear grafts	5,756	
„ stock	4,255	
Apricot budded	750	
„ stock	5,140	
Plum, budded	1,785	
„ stock	2,745	
Cherry, budded	595	
„ stock	7,693	
Peach, budded	563	
„ stock	17,100	
Loquat	263	
Quince	247	
Fig	200	
Currant	578	
Chestnut	150	52,675
Total ...		316,196

"The above fruit trees are exclusive of 2,997 of sorts in the orchard and 407 old stocks of sorts for the production of stocks for grafting and budding.

"Messrs. Veitch and Sons sent out this spring one dozen peach, one dozen nectarine and one dozen fig trees to replace those sent out last year and which failed to grow. This consignment, together with two dozen new apple, half dozen greengage and half a dozen damson plum trees, arrived in good condition, and will, I hope, do well."

I fully agree with Mr. Craw's remarks about the gum trees, and no more shall be planted in the forests at present. Those referred to by Mr. Craw were principally the blue gum (Eucalyptus globulus).

But it is not always the case that these trees fail at high elevations and in cold situations ; there are two fine specimens of the blue gum, fully 50 feet high, growing in Naini Tal, at an elevation of nearly 7,000 feet, and on a northern aspect, which look perfectly healthy now and were not at all damaged by last winter's heavy snow. However, there is no doubt that the blue gum is a tree which cannot be fully depended on in Kumaun, and therefore it will be advisable not to plant any more as forest trees until we have gained a few years' further experience by watching those already planted out.

At the foot of the hills it dies from excessive moisture, and in various elevations and situations at from 2,000 to 7,000, where we have tried it, it sometimes thrives well at first, but is apt to fail, from some cause or another, during the second or third year.

The Pinus excelsa trees are growing remarkably well at Ránikhet, and I intend to extend the cultivation of this fine timber tree both there and in parts of the Naini Tal forests.

15. **Kumaun Division.**—Some slight alterations had to be made in the permanent establishment owing to a reduction of Rs. 19 in the total. There were 157 cases of breaches of forest rules, in which 353 persons were involved. Convictions were obtained in 136 cases, involving 284 persons. About 100 acres of land in the deserted villages of Chápra, Laiti and Rampur, and about 24 acres in the Chilkía forest were sown with sál seed at the commencement of the rainy season. The seed germinated freely, and the little trees were flourishing at the commencement of the cold weather; but as no protection appears to have been given to them during the winter a great many have, as a matter of course, been cut off by frost. This reboisement work will be more fully reported on in the next annual report. Khair seed has also been sown at Chakalnakal and Khairáli and apparently with the same result as the sál, *i. e.*, no protection given during the winter and many seedlings killed by frost. The Deputy Conservator writes "the difference is very marked where there is any cover and where there is not."

Cutting of creepers and worthless trees was continued in the Mowa-áar forest over an area of about 285 acres.

A new bridle road 6 feet in breadth was constructed for 16½ miles along the top of the outer range between the Nindhore valley and the plains at a cost of Rs. 1,050, which will be very useful for inspection and will serve as a fire-trace when fire-conservancy operations are commenced in the Nindhore sál forest.

The excessive rains of last year did great damage to the existing roads, but they were all thoroughly repaired, including the Nindhore valley road, regarding which special reference was made in para 7 of the orders of the Government of India on the annual report for 1877-78. This road was a difficult one to construct, but it has been steadily improved every year by building pucca walls and bridges and blasting rocks where necessary, and is now in good order and much used for 12 miles above Chorgalia by exporters of forest produce for carting out logs of dry timber and bamboos. The upper three miles of this road is also passable for carts, but a nasty landslip has occurred in one place and it will probably be necessary to avoid this by selecting a new line for about 40 chains on the opposite side of the stream.

All existing buildings were kept in repair.

Two inspection huts, one at Rhea and the other at Gbriadeo, were built at a cost of Rs. 414 for the two.

The small inspection huts at Maulani and Gairarh were knocked down by wild elephants during the rains; they were rebuilt, at a cost of Rs. 164, on sites where there is less danger of elephants damaging them.

16. **Garhwal Division.**—The establishments of old Garhwál and of the Bijnor and Bhágirathi Divisions were re-arranged to suit the new Garhwál and Ganges Divisions.

There were 54 prosecutions for breaches of forest rules, 78 persons were involved, of whom 44 were convicted.

The Kálágarh timber shed, which was mentioned in para. 17 of last year's report, was completed.

A pucca well was constructed at Pákrao, where it was much needed.

The roads suffered from the excessive rain as much in this division as in Kumaun, but they were all thoroughly repaired. The Assistant Conservator gave his special attention to the road from Kálágarh to Bogsar, which is the most important road in the division and the worst to keep in repair, and improved it considerably.

A thinning out of inferior kinds of trees was commenced in the Rehar forest, but the demand for that sort of wood is very slack.

One hundred grafted mangoes and 6 loquat trees, which were kindly given by Sir Henry Ramsay, were planted at depôts and chaukis.

17. **Ganges Division.**—There were 17 cases of breaches of forest rules, in which 30 persons were implicated; in 16 cases, including 29 persons, convictions were obtained. Fourteen of these occurred in Native Garhwál and were tried by the Rája. The existing roads and buildings were all repaired, but those in the leased forests were not visited by a European officer during the year.

The rules for the leased forests mentioned in para. 18 of last year's report are not yet sanctioned. The Hon'ble the Lieutenant-Governor has decided that the Bussahir rules, drawn up by the Panjáb Conservator, will be more suitable for the leased forests of Native Garhwál than those submitted under cover of this office letter No. 37 of 1878. A copy of the Bussahir rules, slightly amended to suit the Tehri lease, has been submitted to the Commissioner of the Kumaun Division with a request that he will place them before the Rája for his acceptance.

II. 3. YEILD AND WOKKING.

18. **Naini Tal Division.**—Yielded—

Block.	Trees felled. Description.	Number.	Estimated yield of timber or fuel in cubic feet.	Remarks.	
1	Mature pine ...	421	20,302	Sawn into scantlings ...	Felled by Departmental agency.
1	Hard wood trees ...	244	17,146	Commissariat fuel ...	
1	Crooked and inferior pine	479			
1	Hard wood trees ...	10	931	Nain Tal fuel ...	
1	Ditto ...	5	150	Burning lime ...	
1	Mature pine ...	507	25,000	For building ...	Removed by purchasers.
1	Miscellaneous ...	2	20		
1	Hard wood trees ...	915	175,770	For charcoal ...	
1	Miscellaneous trees ...	5	74	For various purposes ...	
1	Miscellaneous poles ...	679	2,222	For cattle sheds ...	
	Ditto ...	124	310	For visitors ...	Removed free of charge.
	Miscellaneous for sheds,	111	360	For Government coolies,	
	Miscellaneous for baggage,	26	64	For Forest Department.	
	Mature pine ...	29	1,130	To village right-holders, free of charge, for building, agricultural implements, &c.	
	Small pine ...	259	2,331		
	Oak, &c. ...	13	320		
	Bál poles ...	60	540		
	Miscellaneous poles ...	100	1,200		

In additon to the above 97,587 cubic feet of fuel was supplied to the Commissariat Department, which was prepared from stumps and fallen wood.

19. **Ranikhet Division.**—Yielded—

Name of Forest.	Trees felled. Description.	Number.	Estimated yield of timber or fuel in cubic feet.	Remarks.
Sialu Devi ...	Mature pine ...	5	955	Sold to Government Telegraph Department.
Shauni ...	Ditto ...	36	6,876	Sold to private purchasers.
Ganiadeoli ...	Ditto ...	8	1,528	
Ditto ...	Small pine ...	3	24	
Ránikhet ...	Mature pine ...	1	191	
Chaubatia ...	Ditto ...	1	191	
Ditto ...	Ditto ...	114	7,068	For the supply of fuel to the Commissariat Department. The balance of the fuel preparad for the Commissariat Department was obtained from fallen wood and stumps.
Ditto ...	Oak, &c. ...	433	19,396	
Padholi ...	Mature pine ...	85	5,270	
	Total ...	686	41,499	

Trees given free to villagers—

Shauni ...	Mature pine ...	69	4,140
Ditto ...	Small pine ...	454	2,724
Ditto ...	Oak ...	396	1,584
Bhatronj ...	Mature pine ...	4	240
Ditto ...	Oak, &c. ...	108	432
Bellekh ...	Mature pine ...	38	2,280
Ditto ...	Small pine ...	342	2,052
Ditto ...	Oak ...	17	68
Machor ...	Mature pine ...	6	360
Ditto ...	Small pine ...	36	216
Sún ...	Mature pine ...	6	360
Ditto ...	Small pine ...	170	1,020
Kathalekh ...	Mature pine ...	22	1,320
Ditto ...	Small pine ...	248	1,488
Ditto ...	Oak ...	70	280
Ganiadeoli ...	Mature pine ...	70	4,200
Ditto ...	Small pine ...	274	1,644
Chiliánáo ...	Mature pine ...	24	1,440
Ditto ...	Small pine ...	360	2,160
Karchúli ...	Ditto ...	18	108
Padholi ...	Mature pine ...	36	2,160
Ditto ...	Small pine ...	393	2,358
Chaubatia ...	Mature pine ...	89	5,340
Ditto ...	Small pine ...	400	2,400
Ditto ...	Oak ...	69	276
Dwárson ...	Mature pine ...	25	1,500
Ditto ...	Small pine ...	94	564
Airadeo ...	Mature pine ...	149	8,940
Ditto ...	Small pine ...	1,625	9,750
Ditto ...	Oak, &c. ...	43	172
Sialu Devi ...	Mature pine ...	76	4,560
Ditto ...	Small pine ...	269	1,614
Ditto ...	Oak ...	66	264
	Total ...	6,066	68,014

In addition to the above, the Ránikhet branch of the Naini Tal Brewery Company was supplied with 17,254 maunds of pine fuel and 1,639 maunds of oak charcoal, which was prepared from fallen and hollow trees in the Shauni (protected) forest, and the standing grass in the Ránikhet (reserved) forest was sold to a contractor for Rs. 650. On account of the Military Works having been curtailed no trees were purchased by the Executive Engineer. The Commissariat Department indented for 99,612 cubic feet of fuel, all of which was prepared for them; they took only 21,780 cubic feet, the balance being left on our hands.

The number of trees supplied to villagers was in excess of the number given during 1878-79, though not more than the average annual demand.

20. Kumaun Division.—yielded—

Block.	Trees felled. Description.	Number.	Yield of timber in cubic feet.	Remarks.
I	Mature sál ...	1,533	22,026	Converted into logs and scantlings.
III	Do.	449	14,814	
	Sál	2,197	18,858	
	Jámun	13	144	Cut in clearing fire-lines.
	Pine	22	1,301	
	Haldu	78	4,632	
	Sein	2	80	
I	Inferior kinds ...	47,302	95,356	Thinnings in Mowa-aar forest.

Removed by purchasers, sál ... ... 52,423 cubic feet.
Ditto, shisham, &c. ... ... 3,555 „
Ditto, inferior kinds ... 56,062 „

Total, removed by purchasers, ... 112,040 cubic feet.

21. Garhwal Division—yielded—

Block.	Trees felled. Description.	Number	Yield of timber in cubic feet	Remarks.
No. II.	Mature sein ...	35	3,162	Converted into scantlings to meet an indent from a Meerut merchant. Only 29 trees=2,666 cubic feet were sawn up during 1879-80.

Removed by purchasers, sál ... ... 40,388 cubic feet.
Ditto, other kinds ... ... 25,552 „

Total removed by purchasers ... 65,935 cubic feet.

22. Ganges Division—yielded—

Block.	Trees felled. Description.	Number.	Yield of timber in cubic feet.	Remarks.
V. Khára ...	Various inferior kinds.	4,533	17,648	Converted into 2,204 tors, 465 ballas, and 2,702 ballis for the Ganges Canal head-works.

Fallen wood removed by purchasers, sál ... 2,922 cubic feet.
Ditto, deodar ... 3,362 „
Ditto, other kinds ... 7,431 „

Total removed by purchasers ... 13,715 cubic feet.

The following table shows the number of trees given free to villagers in the leased forests :—

Description of trees.	Green.	Dry.	Total.
Deodar	...	846	846
Tún	...	37	37
Various kinds, principally Pine (pinus longifolia)	4,640	...	4,640

II.—3A. FORESTS UNDER CHARGE OF REVENUE OFFICERS, &c.

23. **Jhansi Forests**—Mr. Dease, Assistant Commissioner, was in charge throughout the year.

The area remains unchanged.

There were 7 cases of breaches of rules in which 10 persons were concerned, all of whom were convicted and punished.

The following statement shows the number of trees planted :—

Name of Forest.	*Trees planted.*			Remarks.
	Teak.	Shisham.	Various.	
Dhakwán ...	1,140	60	...	Transplants from other forests.
Magarpúr ...	...	200	...	The young trees were obtained from the Municipal garden at Mau Ranipur.
Ganúpúra ...	110	90	...	
Bhasneo ...	...	400	...	
Babiuah ...	...	45	30	From a nursery in the forest.
Total ...	1,250	795	30	

All these trees are reported to be thriving at present.

A well was dug in the Dhakwan forest, and an old well was cleared out in Bhasneo, for watering the young trees.

75 acres of land in pargana Moth, which had been unsuccessfully sown previously, were re-sown with babúl seed. The seed germinated pretty freely, but the result is uncertain yet.

676 small trees were felled and converted into that number of poles, and there were 701 poles in stock at the commencement of the year, 1,078 were disposed of, leaving 301 in hand at the close of the year.

24. **Lalitpur Forests**.—Major Liston, Deputy Commissioner, had charge throughout the year.

The area remains unaltered.

Nine persons were prosecuted for breaches of rules, eight of whom were convicted

The depôt sales have increased enormously, as may be seen by the following statement :—

1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.
44	587	703	923	539	857	1,686

Major Liston says : "The large increase in income from depôts is satisfactory, and is due chiefly to the great demand for bamboos. Should the sales increase much it will be necessary to make more carts."

25. **Forests leased to the Roorkee Canal Foundry and Workshops**.—In a letter No. 127, dated 26th June, 1879, I requested the Superintendent to prepare his annual report under the following headings :—

I.—Area and boundaries.
II.—Protection and improvement.
III.—Yield and working.
IV.—Financial results.
V.—General remarks.

and I gave him instructions as to what was required under each heading.

On the 14th May, 1880, I received his letter No. 4543, a copy of which, together with a copy of his statement of receipts and payments for the year, here follows :—

"I have the honour to forward a statement of receipts and payments on account of the forests leased by us ; and to inform you that in my opinion these forests should appear in the report like those leased out by the Collectors.

"Nothing has been done towards laying off fire lines in the Chandi forest. I applied for assistance to enable me to do this, and you supported the recommendation, but without results.

"In para. 9 of my last year's report I informed you that the whole of the Pattri boundaries have been laid out with straight boundaries, and I sent you a map received from Major Wilkins, the Revenue Surveyor, showing how this had been done, but I am sorry to say that when I commenced to check the map I found great mistakes to have been made by the Surveyor from the Revenue Department. The mauzas affected are Muzaffarpur, Gujiah, Bhoapur, Chandrawal and Batterpur Sherpur; in the first two a few acres had been taken from the zamindar, but in the last no less than 70 acres had been given to the zamindar.

"These mauzas have all been resurveyed by the Cooper Hill Assistant Engineer that we have here, and the proper boundaries are being settled through the Collector.

"The settlement of the Budlukera-Memla land referred to in para. 10 has not yet been carried out; all was ready last October, and if the matter had been taken up then it would have been done, but the Collector's order, sent to the tahsildar in November, to have the field on the land to be given over marked out was not carried out till this month. The consequence is that the zamindar has drawn back and insists on being paid money to carry out the transfer ; the amount settled by the Collector of Saháranpur is Rs. 350, and as I see no other means now of settling the matter this has been accepted.

"Last year the boundary ditch measured 14 miles 2 furlongs 2 chains ; this year it is 21 miles 3 furlongs 7 chains; the length of double fire-line is now 11 miles 7 furlongs 6 chains.

"The receipts from the Chándi forest have fallen off very much. I do not know the cause, but it has been attributed to the effects of the year of scarcity; since the end of the official year things have improved. I am inclined to attribute the falling off to the opening of the Dún forests. These were closed, I believe, to the bamboo cutters for years and have not long since been opened."

No. 1200.—*Chandi and Pattri Forests of the Roorkee Workshops, for the year* 1879-80.

No. of work.	Description.	Amount.	Total.
	Expenditure on Chandi forest.	Rs. a. p.	Rs. a. p.
1200-1	To Rent of forest	5,000 0 0	
„	„ Pay of Munsarim, Munshis and Chaprasis	1,669 14 9	
„	„ Making chaukis for Munshis	13 0 0	
„	„ Making Chandi road	69 12 9	
„	„ Making road for carting charcoal	28 4 6	
„	„ Repairs to road at Shampur	5 10 0	
„	„ Oil, &c., for chauki Shishamghat	3 12 0	
„	„ Printing forms for forest	30 9 2	
1200-5	„ Repairs to boundary ditches of Shajanpur Peli ...	5 10 0	
1200-7	„ Fixing and repairing cart weighing Machine at depôt. ...	78 6 2	
			6,904 15 4
	Expenditure on Pattri forest.		
1200-2	To Pay of establishment	575 6 9	
„	„ Re-tiling buildings and repairs	154 5 9	
„	„ Making fire-lines	342 3 11	
„	„ Making bungalow road	39 2 0	
„	„ Making main fire-line, Rajbaha to Padartha	133 7 9	
„	„ Iron tube for ditto	92 1 4	
„	„ Weeding, &c., castor trees	140 11 0	
„	„ Cutting grass round firewood stacks	10 0 0	
„	„ Carrying dák and money	18 6 6	
1200-4	„ Water-rent	301 7 0	
„	„ Dressing field No. 22 and planting &c., tea plants ...	120 9 0	
„	„ Dressing fields Nos. 18 and 19 for sowing *tills*	125 1 9	
„	„ Sowing and cutting *tills*	87 11 9	
„	„ Dressing field No. 23 and planting *eucalyptus plants* ...	23 0 3	
„	„ Cutting grass on boundary and fire-lines	264 15 3	
„	„ Watering and working on plantation	553 4 9	
1200-6	„ Surveying Aithal and Buddhathera boundaries ...	164 13 8	
„	„ Repairs to boundaries	33 3 6	
„	„ Digging boundary ditches at Shaihbazpur	96 9 0	
„	„ Advance for digging boundary ditches	400 0 0	
1200-7	„ Repairs to tools	24 6 11	
1200-8	„ (8) Phaorahs, Rs. 40, (1) plough, Rs. 6-7-1	16 7 1	
1200-9	„ Travelling allowances	160 0 0	
„	„ Food for elephant and wages, &c.	605 8 3	
„	„ Oil for guard	6 1 0	
			4,489 0 2
	Expenditure Rs. ...	...	11,393 15 6

Description.	Amount.	Total.
Income from Chandi forest.	Rs. a. p.	Rs. a. p.
By Revenue, which was collected in April, 1879 ...	478 9 2	
„ Bamboos, 9,00,460	2,974 1 5	
„ Bhábar	364 1 9	
„ Bán Bhabar, 31 maunds 20 seers, @ Rs. 3-4... ...	6 9 0	
„ Moonj	13 11 0	
„ Hides	7 12 9	
„ Mirchagand 11 maunds 32 seers 8 chattacks @ 0-4-0 ...	2 15 3	
„ Kanda 547 „ 25 „ @ 0-4-0	136 14 6	
„ Grass	43 0 9	
„ Stones	11 10 0	
„ Grazing cattle of Shampur, 1877-78 ...336 8 0	544 0 0	
„ Grazing camels, &c., for 1879-80 ...207 8 0		
„ Charcoal, 17,059 maunds 20 seers @ 0-1-0	1,066 3 6	
„ Firewood	125 14 6	
„ Ballas, &c.	308 2 3	
„ Fines	29 0 0	
		6,112 9 10
Income from Pattri forest.	Rs. a. p.	
By Revenue, which was collected in April, 1879 ...	5 0 0	
„ Grass and mala auctioned	740 0 0	
„ Grazing Dhun, 1875-76 ... 27 14 0		
„ Do. do., 1876-77 ... 41 10 0	1,684 8 0	
„ Do. do., 1877-78 ... 103 0 0		
„ Do. do., 1878-79 ... 1,512 0 0		
„ Firewood to Workshops	222 11 0	
„ Old Bamboos	7 0 0	
„ Lambardari on irrigation	9 0 6	
„ Returns from tools	5 5 3	
„ Fine 129 5 6	140 13 6	
„ Fine on field No. 23 ... ... 11 8 0		
		2,814 6 3
Rupees ...	...	8,927 0 1
Expenditure greater than income ...	...	2,466 15 5
Total, Rs. ...	...	11,393 15 6

As it was then too late in the year to call for another report to be prepared according to my instructions, I wrote to the Superintendent (No. 64, dated 19th May, 1880) reminding him that a fire-conservancy report would be expected at the commencement of the rains, and requesting him to send me a memo. showing the amounts expended on certain items in his statement of charcoal, firewood and poles supplied to the workshops, the amount of firewood taken from each forest, and the number and size of the poles.

Up to date (27th June, 1880) no reply has been received from the Superintendent, and as it is now time to send the report to be printed I must submit the reply separately.

It is quite impossible for the Conservator to know what is going on in these forests which are leased to the Roorkee workshops without a proper annual report, and I trust that the Hon'ble the Lieutenant-Governor will either insist on the Superintendent submitting annual reports in accordance with the instructions he has received, and replying to the Conservator's letters without unnecessary delay, or order the forests to be taken from the Superintendent and placed under direct management of the Forest Department in the Ganges division.

I am strongly in favour of the latter course, for I do not think that the Superintendent has time to look after the forests properly, and I recommend that it be adopted as soon as an efficient officer is appointed to the Ganges division. At present there is no officer in that division, Mr. Grant having taken a year's furlough on medical certificate in May last.

A perusal of the Superintendent's letter and statement will show that very little information is given from which to form an opinion as to how the forests have been worked during the year under report.

II.—4. FINANCIAL RESULTS.

26 **Naini Tal Division.**

	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.
Receipts	15,285	17,155	21,426
Expenditure	9,648	8,292	21,005
Surplus ...	5,637	8,863	421
Percentage of expenditure to receipts ...	·631	·483	·980

Although the accounts of the year show such a small surplus, the net profit amounts to about Rs. 19,000, when the difference in value between the commencement and close of the year of the timber in stock, the live and dead-stock, and the outstandings is taken into account. The expenditure on building iron-roofed sheds for storing timber and charcoal, and on preparing large stocks of timber and charcoal has been extraordinarily heavy during the year under report, and without immediate profit.

Detail of Revenue.

I. (*b*)—Fuel supplied to the Commissariat Department and to the station :—

	Rs.	a.	p.
Prepared from stumps and fallen wood, 28,956 maunds... } Ditto hollow, dry and crooked trees 6,484 ... }	14,162	5	10
I. (*e*)—Sale of surplus lime, 72 maunds	92	8	0
II. (*a*)—507 pine trees for building, various rates	2,777	0	0
2 miscellaneous ditto, @ Rs. 2-8-0 ...	5	0	0
216 miscellaneous kinds of poles for cattle-sheds ...	138	14	0
6 cubic feet of tún timber @ 8 annas	3	0	0
12 ditto walnut @ 8 annas	6	0	0
Total under II. (*a*) ...	2,929	14	0

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DETAIL OF REVENUE.—(*concluded*).

		Rs.	a.	p.
II. (*b*)—10,850¼ maunds hardwood charcoal @ 2 annas ...		1,356	5	3
1,797¼ ditto pine ditto @ 2 annas ...		225	3	9
2 Rhododendron and 1 simal trees ...		3	8	0
3,515 monthly wood tickets @ 8 annas... ...		1,757	8	0
Total under II. (*b*) ...		3,342	9	0
II. (*c*)—123 loads of ringals @ 2 annas		15	6	0
II. (*d*)—Grazing dues from 509 buffaloes @ 4 annas and 482 cows @ 1 anna		157	6	0
II. (*e*)—658 gharras pine tar, from stumps, @ 2 annas ...		82	4	0
V. (*a*)—Fines		195	2	0
V. (*b*)—Refund of cheque for Adhorá land		439	7	3
V. (*c*)—1 acre 3 roods 9 poles of potatoe cultivation @ 5 Rs. per acre,		9	0	6
Compared with 1878-79 there is an increase under I. of,		8,081	0	0
Under II., a decrease of		4,138	0	0
,, V., an increase of		328	0	0

The outstandings at the close of the year were—

Outstandings due on account of contractors ...	8,495	0	0
Liabilities ditto ditto	65	0	0

The following is a detail of the outstandings—

Balance against Sham Singh, sawing contractor ...	286	0	0
Ditto on account of burning and carriage of charcoal (since recovered)	4,130	0	0
Ditto ditto, carriage of timber	2,000	0	0
Ditto ditto building charcoal shed ...	1,010	0	0
Ditto ditto ditto timber shed ...	890	0	0
Ditto against the Collector of Bánda	139	0	0
Ditto ditto Jeet Singh, road contractor ...	40	0	0

The sum of Rs. 65 "liabilities" has been due to Ishrú, contractor, since 1878-79, but the man cannot be found.

27. **Ranikhet Division**—

	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.
Receipts	12,883	53,364	7,165
Expenditure	18,082	35,803	17,357
Deficit ...	5,199	...	10,192
Surplus ...	...	17,561	...
Percentage of expenditure to receipts ...	1·403	·670	2·422

DETAIL OF REVENUE.

	Rs.	a.	p
I. (*b*)—Fuel supplied to the Commissariat Department :—			
2,094 maunds at various rates	890	2	8
42,720 cubic feet ditto	2,633	14	0
Total under I. (*b*.) ...	3,014	0	8
II. (*a*)—49 Pine trees for building, to private purchasers ...	443	14	0
5 Ditto to Telegraph Department	41	0	0
Royalty on 96 charpoys @ 1 anna	6	0	0
Total under II. (*a*) ...	490	14	0

	Rs.	a.	p.
II. (*b*)—Royalty on 17,254 maunds firewood to Brewery Cos. @ 1½ annas	1,617	9	5
Ditto 1,640 ditto charcoal ditto @ 4 annas,	409	15	1
Ditto 629 ditto ditto P. W. Department,	115	13	8
Huts and fuel for 1,404 squatters in the forests ...	171	1	0
Total under II. (*b*) ...	2,314	7	2
II. (*d*)—Sale of fodder grass	650	0	0
II. (*e*)—Rent of 13 quarries @ 8 annas	6	8	0
Sale of orchard fruits	533	7	3
264 gharras pine tar @ 2 annas	33	0	0
Total under II. (*e*) ...	572	15	3
V. (*a*)—Fines	41	8	0
V. (*b*)—Refunds	2	0	0
V. (*c*)—Other sources	79	5	8

Owing to so few troops being at Ranikhet and to the stoppage of Public Works there was a terrible falling off of revenue in this division.

	Rs.	a.	p.
Compared with 1878-79 there is a decrease under I. of ...	44,712	0	0
Under II., a decrease of	1,387	0	0
Under V., a decrease of	101	0	0

Compared with the regular estimate of the year there is a decrease in revenue of Rs. 3,335, and a decrease in expenditure of Rs. 3,429.

The decrease under I. is due to the Commissariat Department having taken only about ⅓th of the amount of fuel they took during 1878-79, and to the carriage being, at their special request, in there own hands. In future the fuel will always be delivered by the Forest Department.

The receipts from sale of pine trees for building were Rs. 485 during 1879-80 against Rs. 3,267 during 1878-79, which more than accounts for the decrease under II.

What makes the results of the year appear so remarkably unfavourable is the fact of the Commissariat Department having taken over only 21,780 cubic feet of the 99,612 cubic feet of fuel they indented for. The Forest Department was put to the extra expense of Rs. 1,992 in preparing the balance, which, if the Commissariat Department had taken it over, would have increased the receipts under I. to the extent of Rs. 4,533.

There were no outstandings and no liabilities.

28. **Kumaun Division.**

	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.
Receipts	1,79,364	1,70,856	1,65,574
Expenditure	75,202	70,862	73,649
Surplus ...	1,04,162	99,994	91,925
Percentage of expenditure to receipts ...	·419	·414	·444

DETAIL OF REVENUE.

	Rs.	a.	p.
I.—(a) Sál logs	37,094	4	5
,, kolús	272	1	2
,, sleepers	707	14	6
,, karis	48,518	1	8
,, joras	1,561	3	9
,, planks	6	9	1
,, ballis	11	9	0
Sein karis and sleepers	1,434	12	0
Haldú karis and sleepers	358	8	0
Dhauri and Bakli karis	41	4	11
Jáman karis	364	3	6
Chir karis	1,094	11	4
Inferior wood karis	23	12	0
Total under I. (a) ...	91,488	15	4
II.—(a) Sál removed by purchasers	25,263	2	4
Shisham	615	8	2
Sandan	82	15	6
Tún	515	3	9
Jáman	348	11	9
II. (a) Sein removed by purchasers	159	0	7
Haldu	7,685	9	4
Khair	2,282	5	6
Total under II. (a) ...	36,952	8	11
II. (b)—Firewood and charcoal removed by purchasers ...	3,488	13	10
II. (c)—Bamboos ,, ,, ,, ,, ...	6,390	14	10
II. (d)—Grazing and fodder grass ,, ,, ...	9,875	9	2
II. (e)—Other minor produce ,, ,, ...	15,212	11	1
III.—Confiscated drift and waif wood...	373	6	9
V.—(a) Fines and forfeitures	1,014	0	7
V.—(b) Refunds	21	7	9
V.—(c) Other sources	755	4	2
Total Revenue	1,65,573	12	5

	Rs.
Compared with 1878-79 there is an increase under I. of ...	9,172
Under II., a decrease of	15,456
Under III. and V., an increase of	1,001

The sub-heads of II. in which the decreases occur are :—

	Rs.
II. a	11,414
II. c	4,082
II. e	1,880

The Deputy Conservator writes :—" The merchants were much later than usual in coming to the forests this season owing to the autumn sickness in the plains, and they also experienced great difficulty in getting carts ; consequently the rates for carriage were raised, and the export of timber, bamboos, &c., was less than it would otherwise have been."

		Rs.
The value of depôt stock on the 1st April, 1879, was	...	44,616
Ditto ditto on 31st March, 1880	...	26,660

On account of the autumn sickness sawyers came a month later than usual. This, combined with the great difficulty of getting carriage, caused less timber to reach the depôt by the end of the financial year than would otherwise have been the case.

The percentage of expenditure to receipts was a little more than during the two previous years owing to the decrease in revenue under head II., and to a greater expenditure than usual under VIII. (*e*.) for completely clearing of trees almost all the fire-traces in the Chilkia, Gafibúlchand, Kotah, Horai and Jatúnlasal sál forests, which will diminish the fire-conservancy expenses in future years.

The outstandings at the close of the year were—

		Rs.
On account of contractors	... ...	500
Disbursers	...	300
Revenue	...	736

The sum of Rs. 736 has, since the close of the year, been written off, by sanction of the Local Government.

29. Garhwal Division—

	1879-80.
	Rs.
Receipts	1,11,795
Expenditure	68,255
Surplus	43,540.
Percentage of expenditure to receipts	·610

DETAIL OF REVENUE.

		Rs.	a.	p.
I. (*a*)	Sál karis	13,691	0	0
	„ beams	14,562	0	0
	„ jorahs	126	0	0
	Sein karis	4,689	0	0
	Kokat karis	1	0	0
	1,130 sál poles from the Rehar forest	186	0	0
	Total under I. (*a*) ...	33,255	0	0
II. (*a*)	Timber removed by purchasers, Sál	19,833	0	0
	Do „ „ Sisham	265	0	0
	Do. „ „ Sándan	1,303	0	0
	Do. „ „ Tún	148	0	0
	Do. „ „ Khair	4,387	0	0
	Do. „ „ Sein	162	0	0
	Do. „ „ Inferior kinds ...	1,664	0	0
	Total under II. (*a*) ...	27,762	0	0
II. (*b*)	Firewood removed by purchasers	260	0	0
	Rent of forests leased to Roorkee workshops ...	5,000	0	0
	Total under II. (*b*) ...	5,260	0	0

	Rs.	a.	p.
II (c.)—Bamboos removed by purchasers	33,162	0	0
II (d.)—Grazing and fodder grass	3,808	0	0
II (e.)—Other minor produce	6,520	0	0
III—Confiscated drift and waif wood	1,321	0	0
V (a)—Fines and forfeitures	737	0	0
V (b)—Refunds	127	0	0
V (c)—Other sources	43	0	0

The receipts and expenditure of the Bijnor division for the whole year are included in the above figures.

	Rs.
The value of the depôt stock at the commencement of the year was,	25,515
And at the close of the year	27,165

The outstandings at the close of the year were—

	Rs.
Due on account of contractors	200
" " " " disbursers	207

There were no liabilities.

33. **Ganges Division—**

	1879-80.
	Rs.
Receipts	50,970
Expenditure	21,460
Surplus ...	29,510
Percentage of expenditure to receipts ...	·421

DETAIL OF REVENUE.

	Rs.	a.	p.
I. (a)—74 deodar sleepers 10′ × 10″ × 5″	296	0	0
811 ditto, 6′ × 10″ × 5″	1,785	2	0
860 ditto, 6′ × 8″ × 4″	1,720	0	0
455 joined ditto, 6′ × 8″ × 4″	739	6	0
800 rejected ditto, 6′ × 8″ × 4″	200	0	0
1,118 pieces of deodar sleepers	698	12	0
23,310 sein karis	21,735	6	6
10,135 ballas, tors and ballis	4,708	13	7
Total under I. (a) ...	31,883	8	1

	Rs.	a.	p.
II. (a)—Removed by purchasers, deodar	420	5	7
Ditto " " sál	1,081	9	0
Ditto " " sisham	22	9	2
Ditto " " sándan	181	3	3
Ditto " " tún	111	10	5
Ditto " " khair	1,993	10	7
Ditto " " chir, sein and other kinds ...	592	13	5
Total under II. (a) ...	4,403	13	5

	Rs.	a.	p.
II. (b)—Firewood	211	15	6
II. (c)—Bamboos	11,501	5	11
II. (d)—Grazing dues and fodder grass	747	9	10
II. (e)—Other minor produce	991	6	1
III. " Confiscated drift and waif wood	1,083	15	8
V. (a)—Fines and forfeitures	44	11	4
V. (b)—Refunds	101	8	0

When the Ganges Division was formed (1st December, 1879) it received Rs. 20,450 worth of timber from the old Garhwál division, which was further increased during the year to Rs. 31,833. The whole of this timber was disposed of during 1879-80.

The outstandings at the close of the year were—

	Rs.
Due on account of contractors	2,160
" " " disbursers	140

There were no liabilities.

31. As the Garhwál and Ganges divisions now comprise the three old divisions of Garhwál, Bhágirathi and Bijnor, it would be difficult to compare the receipts of this year with those of 1878-79 *by divisions*, but the following amalgamated statement shows the comparison sufficiently clearly for all practical purposes :—

Budget heads.	Receipts from the Garhwál, Bhagiráthi and Bijnor divisions, during 1878 79	Receipts from the Garhwál and Ganges divisions, during 1879-80.	1879-80.	
			Decrease.	Increase.
	Rs.	Rs.	Rs.	Rs.
I.—(a) Timber removed from the forests by Government agency	70,103	59,699	10,404	...
II.—Timber and other produce removed from the forests by consumers or purchasers.				
(a) Timber	32,568	32,166	402	...
(b) Firewood and charcoal	5,955	5 472	483	...
(c) Bamboos	21,635	44,663	...	23,028
(d) Grazing and fodder grass	2,420	4,356	...	1,936
(e) Other minor produce	7,776	7 511	265	...
(III)—Confiscated, drift and waif wood ...	980	2,405	...	1,425
(V)—Miscellaneous	552	1,053	...	501
Total ...	1,41,989	1,57,325	11,554	26,890

The amounts received from sales of deodar sleepers and logs under I. (a) (Rs. 1,01,457 during 1878-79 and Rs. 5,439 during 1879-80) have been omitted from the above statement in order to show the actual ordinary results more clearly, the sale of deodar being an extraordinary source of revenue which varies exceedingly.

32. **Jhansi Forests**—

	1877-78.	1878-79	1879-80.
	Rs.	Rs.	Rs.
Receipts	3,319	2,610	3,648
Expenditure	2,339	3,052	2,910
Deficit ...	...	442	...
Surplus ...	980	...	738
Percentage of expenditure to receipts ...	·704	1·169	·797

The outstandings at the close of the year were—

	Rs.	a.	p.
Due on account of a disburser ...	10	1	3

There were no liabilities.

33. **Lalitpur Forests**—

	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.
Receipts	4,217	5,975	7,023
Expenditure	2,495	4,358	3,585
Surplus ...	1,722	1,617	3,438
Percentage of expenditure to receipts ...	·591	·729	·510

Compared with 1878-79 there is—

	Rs.	a.	p.
Under I. an increase of	829	0	0
„ II. an increase of	220	0	0
„ III. and V. a decrease of	0	5	0
The value of stock on the 1st April, 1879, was ...	1,957	0	0
Ditto „ „ „ 31st March, 1880 ...	601	0	0
The outstandings at the close of the year were—			
Due on account of a disburser	92	0	0

There were no liabilities.

34. **General Summary.**—The results of the year 1879-80, compared with the corresponding figures for the previous year, are shown in the following statement :—

	Actuals.	
	1878-79.	1879-80.
	Rs.	Rs.
Receipts	4,93,405	3,67,601
Expenditure	2,96,679	2,32,234
Surplus ...	1,96,726	1,35,367
Percentage of expenditure to receipts ...	·601	·631

35. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	1,76,980	I.,	96,837	$A\ (I+\frac{V}{2}+\frac{VI}{2}+\frac{IX}{3})+\frac{B}{3}$.
II.—Other revenue ...	1,90,621	II., III., V.,	48,470	$A\ (II+III+\frac{IX}{3})+\frac{B}{3}$.
III.—Formation, protection, and improvement of forests.	...	...	86,927	$A\ (\frac{V}{2}+\frac{VI}{2}+VII+VIII+\frac{IX}{3})+\frac{B}{3}$.
Total ...	3,67,601	...	2,32,234	

36. In the following statement a comparison is shown of the receipts and expenditure in each Division during 1879-80 with the corresponding figures of the previous year :—

Divisions.	Receipts.		Difference.		Expenditure.		Difference.	
	1878-79.	1879-80.	More.	Less.	1878-79.	1879-80.	More.	Less.
	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction ...	*Nil.*	*Nil.*	...	...	28,139	24,013	...	4,126
Naini Tal ...	17,155	21,426	4,271	...	8,291	21,005	12,714	...
Ránikhet ...	53,364	7,165	...	46,199	35,803	17,357	...	18,446
Kumaun ...	1,70,856	1,65,574	...	5,282	70,862	73,649	2,787	...
Garhwál ...	2,43,445	1,11,795	...	80,680	1,46,173	68,255	...	56,458
Ganges ...		50,970				21,460		
Jhánsi... ...	2,610	3,648	1,038	...	3,052	2,910	...	142
Lalitpur ...	5,975	7,023	1,048	...	4,358	3,585	...	773
Total ...	4,93,405	3,67,601	6,357	1,32,161	2,96,679	2,32,234	15,501	79,945

37. The surplus shown in para. 34 is based on the accounts of the year, but the following summary shows the actual profits of the year :—

Particulars.	Amounts.
	Rs.
Receipts of the Department during 1879-80	3,67,601
Expenditure ditto ditto	2,32,234
Surplus	1,35,367
Value of timber at the commencement of the year	72,040
Ditto close ditto	69,937
Difference against the year to be deducted	2,103
Balance	1,33,264
Value of live and dead-stock at commencement of the year	74,721
Ditto ditto at close ditto	78,629
Balance to be added	3,908
	1,37,172
Deduct— Amount of revenue realized on account of previous periods	809
Balance	1,36,363
Add— Outstandings of the year minus bad debts	12,220
	1,48,583
Add— Amount disbursed on account of previous periods	*Nil.*
	1,48,583
Deduct— Amount due on transactions of the year, but not yet paid	65
	1,48,518
Deduct— Outstandings at commencement of the year	10,326
Balance showing actual profits of the year ...	1,38,192

IV.—GENERAL REMARKS.

38. The receipts of the year were Rs. 1,25,804 less than the receipts of 1878-79, which is due to a decrease in the Ránikhet division of Rs. 46,199, as explained in para. 27, and to a decrease from sale of deodar sleepers from the leased forests of Rs. 96,018, as mentioned in para. 31.

The surplus of the year is Rs. 61,359 less than in 1878-79, and the actual profits of the year, as shown in para. 37, are Rs. 36,719 more than the actual profits of 1878-79.

Up to 1876-77 the II. (a) receipts were considerably swelled by the export of sál timber felled previous to the existence of the Forest Department, and by clearances of forest for cultivation; and the average receipts from sale of deodar sleepers from the leased forests in the Bhágirathi division for the five years 1874-75 to 1878-79 were Rs. 1,34,405 against Rs. 5,439 in 1879-80.

Considering that the old sál timber has all been exported, that there are now no clearances for cultivation, and that fellings in the deodar forests have been stopped, the results of the year 1879-80 are satisfactory.

The average percentage of expenditure to receipts for the nine years 1870-71 to 1878-79 was ·812.

The percentage of the year under report was ·631, and the average percentage of the five previous years was ·679.

Notwithstanding the heavy expenditure in the Naini Tal division, the exceptionally bad results of the Ránikhet division, the extra expenditure on fire-conservancy in the Kumaun division, and the great decrease in revenue from deodar sleepers, the percentage of expenditure to receipts during 1879-80 was less than the average percentage of previous years.

39. In May, 1880, Mr. Grant was allowed 12 months' leave on medical certificate. Ill-health was, I presume, the reason of his inactivity during 1878-79.

40. Messrs. Brereton, Campbell and Braidwood worked well, as usual, and I expect a marked improvement in the Garhwál division under Mr. O. Grieg.

41. With reference to the latter portion of para. 50 of last year's report and to para. 5 of the Government of India letter No. 1033F., dated 30th December, 1879, I am rather afraid that the extra cost of breaking the Kumaun division into two might not be covered by an increased revenue at present, although perhaps such an arrangement may be desirable when the railway advances to Pilibhít and to the foot of the hills below Naini Tal.

During 1879-80 the fire-conservancy, plantations and thinning operations in Western Kumaun were placed under charge of Mr. Blanchfield, Forest Ranger, a very good officer, of whom Major Campbell writes: "Mr. Blanchfield has shown much energy and aptitude for forest work," and the fire-conservancy works in eastern Kumaun were under charge of Bahal Rai, forester, who worked well.

By this arrangement the divisional officer was not tied to any one place and was at liberty to travel about his division wherever and whenever necessary.

42. All the divisional officers give favourable reports of the members of their subordinate establishments.

43. My office was kept in perfect order by Mr. Braidwood, with the aid of Mr. Sheils, who is an excellent head-clerk.

44. Some explanation is necessary with reference to para. 10 of the Government of India letter No. 1033F., dated 30th December, 1879, and paras. 88 and 91 of the Inspector-General's review of forest administration in the several provinces under the Government of India for the year 1878-79.

From the statement given below it will be seen that the average *gross* receipts of the North-Western Provinces for the five years 1864-65 to 1868-69 were Rs. 6,06,389; for the five years 1869-70 to 1873-74 Rs. 10,79,363; and for the five years 1874-75 to 1878-79 Rs. 9,13,262.

The *net* receipts for these three periods were Rs. 2,66,129, 2,68,347 and 2,75,504.

Up to 1868 the forests were under the administrative charge of Commissioners of Divisions. In 1868 Major Pearson was appointed Conservator of the North-Western Provinces. Since January, 1871, the undersigned has held the post of Conservator.

During the five years 1871-72 to 1875-76 the gross receipts were enormously increased by the supply of deodar sleepers for State Railways, the average gross receipts for those five years being Rs. 12,72,226.

It must be borne in mind that this large amount of timber was never supposed to be within the maximum annual yield of the forests; there was a lot of mature timber standing in the forests, a sudden demand arose for it and all trees which could be spared without injury to the forests were felled.

The trees felled during this period probably represented the annual yield of some 50 years or more; the interest of 50 years was realized in five, and as a matter of course the gross receipts of these five years were considerably increased thereby.

During former years (up to 1876-77) the receipts were also largely increased by export of sál timber which was felled a long time before and left in the forests, and by the export of timber from forests which were being cleared for cultivation.

It should also be borne in mind that the two most important revenue-producing divisions (Kumaun and Garhwál) have, from the commencement, been worked on the excellent khám tahsíl system for collection of minor forest produce revenue which was instituted by the present Sir Henry Ramsay, a system in which neither Major Pearson nor I have been able to find much room for improvement.

The value of a property of course depends on its area; calculated in this way the following statements will show that the forests of the North-Western Provinces are, and have always been, a very much more valuable property than the forests of the Central Provinces, Bengal or Assam.

NORTH-WESTERN PROVINCES.—*Receipts and expenditure for the* 15 *years from* 1864-65 *to* 1878-79.

Year.	Area in square miles.	Expenditure. A.	Expenditure. B.	Total expenditure.	Receipts.	Net results. Surplus.	Net results. Deficit.	Remarks.
		Rs.	Rs.	Rs.	Rs	Rs.	Rs.	
1864-65,	2,915	3,29,983	65,739	3,95,722	6,39,010	2,43,288	...	The area is made up as follows:— Sq. miles
1865-66,	2,915	2,06,272	86,242	2,92,514	6,50,401	3,57,887	...	Area of Central Circle, for 1878-79 ... 1,568
1866-67,	2,915	2,28,186	83,711	3,11,897	5,77,954	2,66,057	...	Do. School do., 720
1867-68,	2,915	2,04,249	85,139	2,89,388	5,11,191	2,21,803	...	Area of Gorakhpur division, for 1878-79, 115
1868-69,	2,915	3,10,303	1,01,475	4,11,778	6,53,389	2,41,611	...	Do. Bareilly do., 137
Average of five years,		2,55,799	84,461	3,40,260	6,06,389	2,66,129	...	Area of forests in Kumaun which are in charge of the Revenue Officers, but from which the Forest Department collects revenue from forest produce ... 360
„ per sq. mile,		88	29	116	208	91	...	
1869-70,	2,915	2,95,969	1,27,441	4,23,410	7,26,255	3,02,845	...	
1870-71,	2,915	5,41,957	1,33,928	6,75,885	3,65,076	....	3,10,809	Do. ditto in Garhwál ... 15
1871-72,	2,915	8,16,519	1,53,751	9,70,270	10,33,134	62,864	...	
1872-73,	2,915	8,67,314	1,51,698	10,19,012	16,42,856	6,23,844	...	
1873-74,	2,915	8,21,813	1,44,693	9,66,506	16,29,496	6,62,990	...	
Average of five years,		6,68,714	1,42,302	8,11,016	10,79,363	2,68,347	...	
„ per sq. mile,		229	49	278	370	92	...	
1874-75,	2,915	7,16,878	1,38,997	8,55,875	10,85,947	2,30,072	...	
1875-76,	2,915	3,91,385	1,46,529	5,37,914	9,69,698	4,31,784	...	
1876-77,	2,805	5,07,755	1,47,175	6,54,930	8,15,221	1,60,291	...	110 Square miles of Iron Works Company forests handed over to the Commissioner of Kumaun.
1877-78,	2,805	3,79,751	1,63,173	5,42,924	8,36,104	2,93,180	...	
1878-79,	2,805	4,18,906	1,78,238	5,97,144	8,59,339	2,62,195	...	
Average of five years,		4,82,935	1,54,822	6,37,757	9,13,262	2,75,504	...	
„ per sq. mile,		170	54	224	321	97	...	
Average of 15 years,		4,69,149	1,27,195	5,96,344	8,66,338	2,69,993	...	

CENTRAL PROVINCES.—*Receipts and Expenditure for the 15 years from 1864-65 to 1878-79.*

Year.	Area in square miles.	Expenditure. A.	Expenditure. B.	Total expenditure.	Receipts.	Net results. Surplus.	Net results. Deficit.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1864-65		35,610	61,964	97,574	89,307	...	8,267
1865-66		38,504	74,994	1,13,498	2,02,644	89,146	...
1866-67		46,817	81,041	1,27,858	3,67,095	2,39,237	...
1867-68		1,13,068	99,031	2,12,099	3,49,491	1,37,392	...
1868-69		1,86,925	1,07,730	2,94,655	3,50,536	55,881	...
Average of five years		84,185	84,952	1,69,137	2,71,815	1,02,678	...
1869-70		3,65,801	1,08,445	4,74,246	4,16,020	...	58,226
1870-71		1,95,251	1,12,182	3,07,433	6,58,120	3,50,687	...
1871-72		1,24,621	1,07,059	2,31,680	4,47,764	2,16,084	...
1872-73		1,33,666	1,11,171	2,44,837	4,81,673	2,36,836	...
1873-74		1,67,010	1,16,546	2,83,556	5,68,367	2,84,811	...
Average of five years		1,97,270	1,11,080	3,08,350	5,14,389	2,06,038	...
1874-75	19,075	1,78,513	1,15,726	2,94,239	6,61,779	3,67,540	...
1875-76	18,842	2,40,523	1,30,240	3,70,763	7,25,335	3,54,572	...
1876-77	18,835	1,67,334	1,21,306	2,88,640	6,61,326	3,72,686	...
1877-78	19,500	1,78,401	1,39,277	3,17,678	6,83,910	3,66,232	...
1878-79	19,605	2,36,029	1,57,686	3,93,715	8,52,862	4,59,147	...
Average of five years		2,00,160	1,32,847	3,33,007	7,17,042	3,84,035	...
,, per square mile for the five years 1874-75 to 1878-79 ...		10	7	17	37	20	...
Average of 15 years		1,60,538	1,09,626	2,70,165	5,61,082	2,30,917	...

The above statement shows the results of the whole of the Central Provinces' forests, including 1st and 2nd class reserved and unreserved, for the 15 years from 1864-65 to 1878-79, and the following statement shows the results of the 1st class reserved forests only of the Central Provinces for the five years from 1874-75 to 1878-79.

Year.	Area in square miles.	Total Receipts.	Total expenditure.	Net results. Surplus.	Net results. Deficit.
		Rs.	Rs.	Rs.	Rs.
1874-75	2,133	2,02,115	2,16,751	...	14,636
1875-76	2,339	2,59,661	2,84,964	...	25,303
1876-77	2,391	1,84,255	1,94,955	...	10,700
1877-78	2,548	1,47,798	1,78,950	...	31,152
1878-79	2,601	2,22,953	2,19,739	3,214	...
Average of five years		2,03,356	2,19,072	...	15,715
Average per square mile for the 5 years, 1874-75 to 1878-79		85	92	...	7

Those figures show that the 1st class reserved forests of the Central Provinces (average area 2,381 square miles) have cost Rs. 10,95,359 to work for five years, and have brought in receipts amounting to Rs.10,16,782, the result being a net loss of Rs. 78,577.

The large surplus revenue from the forests of the Central Provinces appears to have been derived entirely from unreserved forests, which, up to the close of 1876-77, were under executive charge of officers of the Revenue Department. In para. 175 of his annual report for 1876-77 the Conservator of the Central Provinces wrote :—

"Since the close of the year an important change in organization has taken place. Hitherto officers of the forest controlling establishment had nothing to do with the executive work in the unreserved forests, the executive work of these officers being confined to the management of the reserves."

BENGAL.—*Receipts and Expenditure for the* 15 *years from* 1864-65 *to* 1878-79.

Year.	Area in square miles.	Expenditure. A.	Expenditure. B.	Total expenditure.	Receipts.	Net results. Surplus.	Net results. Deficit.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1864-65		2,092	6,604	8,696	*Nil.*	...	8,696
1865-66		19,480	16,292	35,772	38,584	2,812	...
1866-67		89,326	14,881	1,04,207	50,555	...	53,652
1867-68		1,41,382	24,223	1,65,605	75,687	...	89,918
1868-69		95,581	30,676	1,26,257	2,24,546	98,289	...
Average of 5 years		69,572	18,535	88,107	77,874	...	10,233
1869-70		61,004	34,870	95,874	1,13,753	17,879	...
1870-71		26,272	60,186	86,458	1,19,678	33,220	...
1871-72		43,907	64,429	1,08,336	1,39,088	30,752	...
1872-73		28,526	71,090	99,616	1,49,851	50,235	...
1873-74		28,552	56,936	85,488	1,16,633	31,145	...
Average of 5 years		37,652	57,502	95,154	1,27,801	32,646	...
1874-75	7,004	39,062	60,341	99,403	1,85,933	86,530	...
1875-76	7,869	68,255	70,831	1,39,086	1,98,274	59,188	...
1876-77	8,510	90,172	1,21,517	2,11,689	2,22,401	10,712	...
1877-78	8,538	1,46,857	1,14,354	2,61,211	4,26,228	1,65,017	...
1878-79	10,000	2,10,914	1,27,757	3,38,671	4,16,024	77,353	...
Average of 5 years		1,11,052	98,960	2,10,012	2,89,772	79,760	...
Average per square mile for the 5 years 1874-75 to 1878-79 ...		13	12	25	35	10	...
Average of 15 years		72,759	58,332	1,31,091	1,65,149	34,058	...

ASSAM.—*Receipts and Expenditure for the five years from* 1874-75 *to* 1878-79.

Year.	Area in square miles.	Expenditure. A.	Expenditure. B.	Total expenditure.	Receipts.	Net results. Surplus.	Net results. Deficit.	Remarks.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1874-75...	7,718	31,138	28,385	59,523	64,749	5,226	...	
1875-76...	8,068	33,187	28,697	61,884	1,07,302	45,418	...	
1876-77...	8,068	42,005	47,915	89,920	81,568	...	8,352	
1877-78...	7,381	48,954	51,333	1,00,287	1,34,326	34,039	...	
1878-79...	7,383	64,519	61,508	1,26,027	1,61,779	35,752	...	
Average of 5 years,		43,961	43,567	87,528	1,09,945	22,417	...	
Average per square mile for the 5 years 1874-75 to 1878-79.		6	6	12	15	3	...	For calculating the figures in this line 7,383 square miles have been taken as the area.

45. The following paragraph contains a report on the results of fire conservancy operations for the period from the commencement of the rains of 1879 up to the commencement of the rains of 1880.

(*a*) **Naini Tal Division.**—The whole of the forests of this division, the approximate area of which is 19,200 acres, were attempted to be protected from fire. Three fires occurred, by which 163 acres were burnt, as follows :—

22nd March—one acre of bare precipice burnt in Búrapátal.

24th May—160 acres of precipitous ground with a few pine trees on it burnt in Kaphlári. This fire was supposed to have been lighted by some grass-cutters, but no one was caught.

30th May—Two acres of forest in Kalnagadh burnt ; supposed to have been lighted by fishermen, but they had decamped before the forest officials arrived. The cost of fire conservancy in the Naini Tal division was Rs. 380.

(*b*) **Ranikhet Division.**—The following were the areas attempted to be protected, which is 2,560 acres in addition to the area attempted last year :—

				acres.
Ránikhet reserved forest	...	...	...	4,800
Ganiadeoli, closed protected	...	...	...	320
Kathallekh ditto ...	...	...	...	320
Shauni, protected ...	...	...	...	2,560

One fire occurred, by which 12 acres of the Ganiadeoli forest were burnt.

A little before 5 A. M. on the 11th June, 1880, a fire was observed within the closed block of Ganiadeoli, which was extinguished by the fire patrols after having burnt over about 12 acres. As the outside fire-trace was in perfect order, and the fire occurred about the centre of the block, there is every reason to suppose that it was the act of an incendiary. Suspicion has fallen on three men who were fined a short time before, by the Cantonment Magistrate, for illicit cutting of grass and grazing in this block, and who consequently owed the forest guard a grudge for reporting them.

(*c*) **Kumaun Division.**—Fire conservancy was confined to the area attempted during the previous year, *viz.*, 87,535 acres, as follows :—

			acres.
Western Kumaun	Chilkia (Mohán), Block I....	...	46,240
	Kotah Block III. ...	...	23,298
	Gáribolchand, Block II. ...	...	7,112
Eastern Kumaun ...	Horai, Block V. ...	...	2,565
	Sudlimat and Jounla sál Block VII.	...	8,320

The cost was Rs. 6,274.

Six fires occurred, by which 306 acres were burnt, as follows :—

In Block I. there were three fires —

At Ganjar in the Chilkia forest a fire was lighted by some travellers on the 20th March, 1880, which burnt over 35 acres.

On the 2nd April a fire-trace contractor burnt 134 acres between the Dhouradeh and Dhulwa sots, for which he was fined.

On the 10th April a fire-trace contractor burnt 90 acres at Dhungalgarh, for which he was fined.

The other three fires occurred in Block III.—

On the 17th January one acre of the Rampur plantation was burnt over when the fire-trace was being cleared but no damage was done.

On the 10th March 35 acres of the Choufula forest were burnt by some exporters through negligence of a forest guard and a contractor, all of the culprits were fined and the guard was dismissed.

On the 2nd April 11 acres at Mangrow sot were burnt. The fire was supposed to have been lighted by villagers, but no body was caught.

As mentioned in para. 56 (c) of last year's report the protection of the Horal forest was kindly undertaken by the Commissioner.

(d) **Garhwal Division.**—In this division fire-conservancy was attempted over the same areas as were attempted to be protected during the previous year, viz., 61,095 acres as follows :—

				acres.
Note.—The Papidanda forest figures are shown in the Ganges division.	Dhikála—Patli Dún	Block I.	...	16,036
	Shiskamkhata ditto	ditto	...	2,020
	Paterpani, Maunpani, Jamnagwár	ditto	...	21,070
	Jhara sot, Jamnoli	ditto	...	6,887
	Bhakwa, Domunda	ditto	...	11,104
	Pipal soti, Gonjpani	ditto	...	3,978

The cost was Rs. 4,293.

There were no failures, not a single acre of the fire-protected forests was burnt.

In former years large areas were burnt by the contractors when clearing the fire-traces. This year Mr. O Greig personally superintended the burning of some 50 miles of the traces, just to let the contractors see that it was possible to clear them without damaging the forests.

(e) **Ganges Division**—The Tangnore (leased) deodar forests, area 8,872 acres, were successfully protected by the establishment, with the exception of two acres which were burnt near a camping ground.

The Papidanda reserved forest, area 521 acres, was also successfully protected at a cost of Rs. 189.

(f) **Jhansi Forests**—630 acres of the Sakwan and Dhakwan forests were successfully protected from fire at a cost of Rs. 150.

(g) **Lalitpur Forests**—The forests of Deogarh (298 acres) and Garauli (751 acres) were both sucessfully protected from fire at a cost of Rs. 52.

(h) The year was very favouable for fire-conservancy. Out of a total area of 187,602 acres attempted only 483 acres were burnt, 187,119 acres were actually protected at a cost of Rs. 11,571.

(i) The following is the result of fire conservancy in the forests leased to the Roorkee workshops :—

Name of forest.	Forest tract or block.	During dry season of 1879.				Remarks.
		Area attempted to be protected.	Failures.	Actually protected.	Amount expended	
		Acres.	Acres.	Acres.	Rs.	
Chandi ...	Sujanpur Peli,	261	261	...	70	Burnt 19th May, 1880,
Pattri ...	Block I ...	74	...	74	...	
" ...	2 ...	202	202	...	...	" 6th Jan, 1880.
" ...	3 ...	276	275	...	...	Ditto.
" ...	4 ...	236	236	...	...	Ditto
" ...	5 ...	488	244	244	...	" 8th Jan., 1880.
" ...	6 ...	314	314	...	...	Ditto.
" ...	7 ...	395	395	...	...	Ditto.
" ...	8 ...	286	236	50	...	" 6th Jan., 1880.
" ...	9 ...	105	105	...	...	Ditto
" ...	10 ...	233	233	...	...	" 3rd Jan., 1880.
" ...	11 ...	68	...	68	...	
		2,937	2,501	436	116	

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The Superintendent offers the following explanation :—" Owing to the great amount of fever amongst the forest coolies and contractors' men the clearance of the fire lines was not completed before the fire came on. I was absent at Dechauri all the month of January, 1880, and had not an opportunity of inspecting the work. The contracts for clearing the lines were only signed on the 3rd January, as men could not be got to come forward before that. The frost was earlier and more severe than usual last cold season."

The Superintendent has no time for looking after the forests, and they ought to be taken from him as soon as possible.

46. With reference to para. 39 of the Inspector-General's review of Forest Administration in India for the year 1878-79, and para. 6 of the Government of India letter No. 1033F., dated 30th December, 1879, the following figures show that, compared with the areas of the forests, fire conservancy is more advanced in the North-Western Provinces than in either the Central Provinces, Bengal or Assam :—

Province.	Area in square miles.	Area of forests actually protected from fire during 1879.	Precentage of area protected to total area of forests.	Remarks.
		Acres.		
North-West Provinces,	2,554	2,69,876	18·10	All the reserved and protected forests in the Central and School Circles, the Gorakhpur and Bareilly divisions of Oudh and the Bhágirathi deodar forests are included in the area.
Central Provinces ...	19,283	6,91,363	5·57	Only the reserved forests are included in the area.
Bengal	4,892	1,06,754	3·40	Reserved and protected forests included in the area.
Assam	2,672	33,259	1·94	Reserved and protected forests included in the area.

47. The proportion of failures to area attempted is certainly very small in the Central Provinces. If the success in this respect is due to some system not generally known, a description of it would be most welcome ; but I have always understood that fire conservancy in the Central Provinces is, owing to the shortness of the grass and the favourable situation of the forests, a very simple affair compared to fire conservancy in the North Western Provinces and Oudh sál forests and in the forests of Bengal and Assam.

The system of fire conservancy suggested for Bengal and Assam by the Inspector-General in January. 1879, see para. 36 of Mr. Brandis's review for 1878-79, has been practised in the North-Western Provinces ever since the commencement of fire conservancy ; but it is of no use in these forests without much more elaborate and expensive measures.

48. In para. 39 of his review for 1878-79 the Inspector-General wrote :—" In the Central Circle, out of 200,700 acres, the protection of which was attempted, 67,530 acres failed, and only 133,163 were saved."

In the Central Circle report for 1878-79 it was forcibly brought to notice what a most exceptionally unfavourable season it had been for fire conservancy, and on reference to the reports for Bengal and Assam it appears that the season was even

more unfavourable there than in the Central Circle of the North-West Provinces, as may be seen from the following figures :—

Year.	Province or Circle.	Area attempted to be protected from fire.	Failures.	Actually protected.	Proportion of failures to area attempted.
		Acres.	*Acres.*	*Acres.*	
1879...	Assam ...	90,342	57,083	33,259	·601
1879...	Bengal ...	1,89 653	82,899	1,06,754	·437
1879...	Central Circle, North-West Provinces & Oudh.	2,00,693	67,530	1,33,163	·336

49. There are several other large sál forests in Kumaun and Garhwál which will be brought under fire conservancy within the next four or five years, but, with the present small controlling and executive staff, it would be very bad policy to attempt to take them in hand until we feel that the area now attempted to be protected is fairly secure.

OFFICE OF CONSERVATOR OF FORESTS,
CENTRAL CIRCLE, N.-W. P. AND OUDH :
Dated Naini Tal, the 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle,
N.-W. P. and Oudh.

APPENDICES.

APPENDIX A.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. P. AND OUDH.

RÁNIKHET DIVISION.

Enumeration valuation survey of the north-eastern portion of the Ránikhet Closed Reserve, 1879-80.

Number of block.	Number of compartment.	Chir.				Total of Chir.	Oak.				Total of Oak.	Miscellaneous.				Total of Miscellaneous.	Grand total.	Remarks.
		Class 1.	Class 2.	Class 3.	Class 4.		Class 1.	Class 2.	Class 3.	Class 4.		Class 1.	Class 2.	Class 3.	Class 4.			
II.	15	8	132	677	1,168	1,985	10	24	115	378	527	2	2	33	175	212	2,724	Area 643 acres (approximately).
	16	4	27	371	1,432	1,834	2	2	36	247	287	1	...	12	64	77	2,198	
	17	1	16	252	927	1,196	15	49	214	899	1,177	1	3	35	372	411	2,784	
	18	4	22	248	326	600	14	42	127	379	562	...	4	26	132	162	1,324	
	19	...	43	398	620	1,061	15	28	104	504	651	...	1	31	135	167	1,879	
	Total...	17	240	1,946	4,473	6,676	56	145	596	2,407	3,204	4	10	137	878	1,029	10,909	

1st class = Trees over 8 feet girth.
2nd class = " between 6 feet and 8 feet girth.
3rd class = " " 4 " and 6 " "
4th class = " " 2 " and 4 " "

NOTE.—The area of the Ránikhet reserved forest is *about* 4,480 acres, but it has not been correctly computed yet. According to the above enumeration valuation and that given in para. 9 of last year's annual report, the total number of trees in this forest is as follows:—

Chir.				Total of Chir.	Oak.				Total of Oak.	Miscellaneous.				Total of Miscellaneous.	Grand total.
Class 1.	Class 2.	Class 3.	Class 4.		Class 1.	Class 2.	Class 3.	Class 4.		Class 1.	Class 2.	Class 3.	Class 4.		
137	...	2,218	23,429	63,836	89,320	265	1,019	4,601	13,074	18,919	15	160	3,287	24,837	28,299	1,36,868

APPENDIX B.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. P. AND OUDH.

RANIKHET DIVISION.

Statement of the enumeration valuation survey of the Shauni Protected Forest, 1879-80.

Number of Compartment.	Chir.				Total of Chir.	Oak.				Total of Oak.	Miscellaneous.				Total of Miscellaneous.	Grand total.	Remarks.
	1st class.	2nd class.	3rd class.	4th class.		1st class.	2nd class.	3rd class.	4th class.		1st class.	2nd class.	3rd class.	4th class.			
I.	...	38	366	617	1,021	47	282	1,017	1,442	2,788	...	7	53	242	302	4,111	Area 3,360 acres (approximately). The exact area will be taken from the new maps as soon as they are published.
II.	2	48	653	967	1,670	23	193	499	674	1,389	...	1	1	18	20	3,079	
III.	8	154	1,026	1,189	2,377	166	590	1,804	2,956	5,516	22	104	846	2,607	3,579	11,472	
IV.	8	55	349	2,668	3,080	172	451	1,151	1,581	3,355	27	141	830	2,629	3,627	10,062	
V.	61	450	814	5,777	7,102	69	189	423	503	1,184	11	72	465	1,248	1,796	10,082	
VI.	45	432	1,411	4,835	6,723	15	39	157	292	503	1	11	63	242	317	7,543	
VII.	9	184	725	3,128	4,041	99	192	443	519	1,253	6	19	165	503	693	5,987	
VIII.	73	378	871	7,147	8,469	10	27	91	286	414	1	9	121	722	854	9,737	
IX.	71	477	1,088	6,311	7,947	130	260	386	740	1,516	28	148	930	2,918	4,024	13,487	
X.	15	188	572	2,830	3,606	197	343	494	610	1,644	29	152	751	2,004	2,936	8,186	
XI.	10	114	826	4,924	5,868	167	325	590	981	2,063	31	123	498	1,719	2,371	10,302	
XII.	3	26	473	1,697	2,203	45	95	129	342	611	4	13	81	402	500	3,314	
XIII.	10	119	794	2,634	3557	2	12	38	91	143	...	4	34	102	140	3,840	
XIV.	7	61	1,171	3,564	4,803	112	209	277	380	978	14	34	212	860	1,120	6,901	
XV.	3	47	549	1,072	1,671	...	1	6	9	16	...	3	11	128	142	1,829	
XVI.	41	207	1,105	4,845	6,196	...	...	9	14	23	1	4	23	129	157	6,376	
Total ...	366	2,978	12,790	54,20	70,334	1,254	3,208	7.514	11,420	23,396	175	845	5,084	16,474	22,578	1,16,308	

1st class, Trees over 8 feet.
2nd „ between 6 feet and 8 feet.
3rd „ ditto 4 „ and 6 „
4th „ ditto 2 „ and 4 „

FORM No. 45.

FORESTS DEPARTMENT, N.-W. P. AND OUDH, (CENTRAL CIRCLE.)

Area of Reserved Forests, 1879-80.

Division or Range.	Name of Forest and Civil District.	*Area on 31st April, 1879.*		*Added during the year.*		*Excluded or transferred to other heads.*		*Total on 31st March, 1880.*		No. and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Kumaun District.										
Kumaun Division ...	Block No. 1 ...	126	80,467	...	...	...	...	126	80,467	There have been none during the year.	The areas are subject to correction on completion of Survey by Forest Survey Department.
	" " 2 ...	17	10,937	...	...	...	...	17	10,937		
	" " 3 ...	55	35,200	...	...	...	...	55	35,200		
	" " 5 ...	103	65,606	...	...	...	...	103	65,606		
	" " 7 ...	14	8,960	...	...	...	...	14	8,960		
	" " 8 ...	230	1,47,520	...	...	...	...	230	1,47,520		
	" " 9 ...	68	43,520	...	...	...	...	68	43,520		
	" " 10 ...	7	4,320	...	...	...	...	7	4,320		
	" " 11 ...	7	4,640	...	...	...	...	7	4,640		
	" " 12 ...	8	5,440	...	...	...	...	8	5,440		
		...	320	...	...	...	...	...	320		
	Total ...	635	4,06,930	...	...	...	...	635	4,06,930		
	Kumaun District.										
Ránikhet Division ...	Block No. 11 ...	7	4,480	...	...	...	...	7	6,480	Ditto ...	Ditto.
	Garhwál District.										
Garhwál District ...	Block No. 1, Patli Dún ...	237	1,52,000	...	...	...	...	237	1,52,000	Government, N.-W. P. and Oudh, Rev. Dept., (Forests Branch) Notification No. 40, dated 6th January, 1880.	* Transferred to the new Ganges division on the reconstitution in December last of the old Garhwál Bhágirathi and Bijnor divisions. † Transferred from the Bijnor division, *vide* preceding remarks. The areas are subject to correction.
	" " 2, Kotri Dún ...	180	1,15,520	...	...	...	...	180	1,15,520		
	" " 3, Saneh ...	17	10,880	...	...	17	10,880	* ...	...		
	" " 4, Laldhang ...	36	23,360	...	...	36	23,360	* ...	...		
	" " 5, Khara ...	88	56,320	...	...	88	56,320	* ...	...		
	" " 6, Kartia ...	1	800	...	...	...	...	1	800		
	Bijnor District.										
	Chándi	...	...	62	39,379	† ...	...	62	39,379		
	Rehar	...	...	25	15,719	† ...	...	25	15,719		
	Total ...	559	3,59,880	87	55,098	141	90,560	505	3,23,418		

	Native Garhwál.	A portion of the forests leased from His Highness the Rája of Tehri.								
	Garhwál District.									
Ganges Division ...	Block No. 3 Saneh ...	...	...	17	10,880	‡ ...	...	17	10,880	Government, North-Western Provinces and Oudh, Revenue Department, (Forests Branch), Notification No. 40, dated 6th January, 1880. ‡ Transferred from the old Garhwál division in December last, *vide* remarks opposite Garhwál division. The areas are subject to revision on the completion of the Survey by the Forest Survey Department.
	" " 4 Laldhang ...	...	...	39	23,360			36	23,360	
	" " 5 Khara ...	...	...	88	56,320			68	56,320	
	Total ...	...	...	141	90,560	...	...	141	90,560	
	Jhánsi District.									
Jhánsi Division ...	Jhánsi	16	10,130	...	...	...	...	16	10,130	There have been none during the year. The areas are subject to correction.
	Mau	9	6,084	...	...	...	...	9	6,084	
	Garotha	8	5,127	...	...	...	...	8	5,127	
	Moth	4	2,272	...	...	...	...	4	2,272	
	Total ...	37	23,613	...	...	...	...	37	23,613	
	Lalitpur District.									
Lalitpur Division ...	Lalitpur	...	255	...	...	...	...	...	255	Ditto ... Ditto ditto.
	Bansi	7	4,733	...	...	...	...	7	4,733	
	Tálbahat...	18	11,653	...	...	...	...	18	11,653	
	Balabahat	47	30,186	...	...	...	...	47	30,186	
	Bánpur	7	4,745	...	...	...	...	7	4,745	
	Mahroni	2	1,283	...	...	...	...	2	1,283	
	Maraura...	62	40,290	...	...	...	...	62	40,290	
	Total ...	143	93,145	...	...	...	...	143	93,145	
	Bijnor District.									
Bijnor Division ...	Chandi	62	39,379	...	...	62	39,379	¶ ...	...	Government, North-Western Provinces and Oudh, Revenue Department, (Forests Branch) Notification No. 40, dated 6th January, 1880. ¶ These forests now form a portion of the Garhwál division, *vide* remarks opposite Garhwal division.
	Rehar	25	15,719	...	...	25	15,719	...	...	
	Total ...	87	55,098	...	...	87	55,098	...	...	
	Total area of reserved forests in the Central Circle, N.-W. P.	1,468	9,42,145	‖228	‖1,45,658	‖228	‖1,45,658	1,468	9,42,146	

‖ These are only interdivisional transfers as explained in the column of remarks opposite the Garhwál, Ganges and Bijnor divisions.

FORM No. 45.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Area of Protected Forests, 1879-80.

Division or Range.	Name of Forest and Civil District.	*Area on 1st April, 1879.*		*Added during the year.*		*Excluded or transferred to other head.*		*Total on 31st March, 1880.*		No. and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Kumaun District.										
Naini Tál ...	Naini Tál	38	2,4320	...	88	...	...	38	24,408	N.-W. P. & Oudh, Revenue (Forests) Dept. Notn. Nos. 811 and 1010, dated 7th Aug., 1879 and 23rd September, 1879.	The correct area has not yet been received from the Superintendent, Forest Surveys.
	Kumaun District.										
Ránikhet ...	Block No. 1, Machor ...	...	211	...	...	...	...	...	211	There have been none during the year.	Areas subject to correction when surveyed by the Forest Survey Department.
	" " 2, Bhatronj ...	9	5,760	...	...	...	...	9	5 760		
	" " 3, Tetalikhet ...	7	4,480	...	...	...	...	7	4,480		
	" " 4, Siun ...	1	640	...	...	...	...	1	640		
	" " 5, Bellekh ...	1	640	...	...	...	...	1	640		
	" " 6, Kathalek ...	3	1,920	...	...	...	...	3	1,920		
	" " 7, Ganiyadeoli ...	2	1,280	...	...	...	...	2	1,280		
	" " 8, Karchuli ...	...	203	...	...	...	...	...	203		
	" " 9, Chiliano ...	1	640	...	...	...	...	1	640		
	" " 10, Chaubattia ...	2	1,280	...	...	...	...	2	1,280		
	" " 12, Padholi ...	1	640	...	...	...	...	1	640		
	" " 13, Dwarson ...	3	1,920	...	...	...	...	3	1,920		
	" " 14, Airadeo ...	26	16,640	...	...	...	...	26	16,640		
	" " 15, Sishi Devi ...	3	1,920	...	...	...	...	3	1,920		
	Total ...	59	38,174	...	...		...	59	38,174		
	Lalitpur District.										
Lalitpur ...	Lalitpur	...	65	...	...	...	...	...	65	Ditto.	
	Telbahat...	3	2,363	...	...	...	...	3	2,363		
	Total ...	3	2,428	...	...	...	...	3	2,428		
	Total area of Protected Forests in the Central Circle, N.-W. P.	100	64,922	...	88	...	...	100	65,010		

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 46.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Area of Plantations, 1879-80.

Division.	Name of Plantation.	On 1st April, 1879. Area.	On 1st April, 1879. Total cost.	During 1879-80. Area added.	During 1879-80. Cost.	On 31st March, 1880. Total area.	On 31st March, 1880. Total cost.	Remarks.
		Acres.	Rs. a. p.	Acres.	Rs. a. p	Acres	Rs. a. p.	
Kumaun ...	Various plantations imperfectly stocked, incomplete or success uncertain.	...	148 0 0	...	*a*524 0 0	...	672 0 0	*a* Part of expenditure under A VIII.*f*., *vide* summary of the year.
Naini Tal ...	Ayarpatha, oak	5	13 0 0	...	...	5	13 0 0	
	Jabar, deodar	30	791 0 0	110	6 0 0	140	797 0 0	
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	296 0 0	...	*b*571 0 0	...	867 0 0	*b* Ditto ditto ditto.
	Total ...	35	1,100 0 0	110	577 0 0	145	1,677 0 0	
Ránikhet ...	Jakhdeo (upper)							
	Ditto (lower)							
	Garkhet	367	11,387 0 0	...	*c*151 0 0	367	11,538 0 0	*c* Ditto ditto ditto.
	Jamoli							
	Dharamkhet							
	Ghingaru khal							
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	639 0 0	...	*d*632 0 0	...	1,271 0 0	*d* Ditto ditto ditto.
	Total ...	367	12,026 0 0	...	783 0 0	367	12,809 0 0	
Garhwál ...	Boxar	...	497 0 0	...	...	...	*e*497 0 0	*e* Expenditure incurred in former years on a plantation since abandoned, as reported in last year's Form 46.
	Prempuri and Saneh	...	...	...	60 0 0	...	*f*60 0 0	*f* Expenditure incurred under A. VIII.*f*., on plantations of fruit trees, mango and luquat, at the Prempuri and Saneh Depôts, area not entered as yet.
	Total ...	...	497 0 0	...	60 0 0	...	557 0 0	
Ganges ...	... ...	...	...	...	...	...	...	
Jhánsi ...	Sakwan and Dakwan	183	78 0 0	...	102 0 0	183	180 0 0	
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	99 0 0	...	223 0 0	...	322 0 0	
	Total ...	183	177 0 0	...	*g*325 0 0	183	502 0 0	*g* Part of expenditure under A. VIII.*f*, *vide* summary of the year.
Lalitpur ...	... ...	...	...	...	...	...	...	
	Total ...	585	13,948 0 0	110	2269 0 0	695	16,217 0 0	

NAINI TAL.
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. & Oudh.

FORM No. 47 (*Suggested*).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Area of forest tracts protected from fire during the dry season of 1880 (*to accompany report*, 1879-80)

Division.	Forest tracts.	*Up to 30th June*, 1879.		*During dry season of* 1880.					Year when protection commenced.	REMARKS.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 30th June, 1880.		
Kumaun Division.		Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	Rs.		
Western Kumaun ...	Chilkia (Mohan) ...	32,020	11,757	46,240	259	45,981	3,413	15,170	1873-74	Block I.
	Kotah	16,770	2,156	23,298	47	23,251	1,644	3,800	1876-77	,, III.
	Garibolchand	2,040	3,228	7,112	...	7,112	550	3,778	1876-77	,, II.
Eastern Kumaun ...	Horai	427	3,720	2,565	...	2,565	275	4,387	1876-77	,, V.
	Sadlimat	1,213		8,320	...	8,320	392			,, VII.
	Joula Sál									
	Total ...	52,470	20,861	87,535	306	87,229	6,274	27,135		
Naini Tal Division.	Naini Tal Forests ...	16,550	1,629	19,200	163	19,037	380	2,009	1876	
Ránikhet Division.	Ránikhet closed reserve ...	4,730	526	4,800	...	4,800	111	707	1874	
	Ganiadeoli	320	119	320	12	308	32	151	1878	
	Kathallek	240	28	320	...	320	39	167	1878	
	Shauni	...	...	2,560	...	2,560	51	51	1880	
	Total ...	5,290	843	8,000	12	7,988	233	1,076		
Garhwál Division.	Dhikala	8,788	10,839	16,036	...	16,036			1873-74	Block I.
	Patli Dún									
	Shisham Khata ...	368		2,020	...	2,020			1876-77	Ditto.
	Ditto									

	Paterpani	18,178	1,245	2,1070	...	2,1070	4,293	16,377	1877-78	Ditto
	Maunpani									Ditto.
	Jaumagwar									
	Jhara Sote	6,727		6,887	...	6,887				
	Jamnoli									
	Bhakwa	...		11,104	...	1,1104				Ditto.
	Domemda									
	Pipal Sote	3,296		3,978	...	3,973				Ditto.
	Gonjpani									
	Total ...	37,357	12,084	61,095	...	61,095	4,293	16,377		
Ganges Division.	Tangnore (leased) Deodar Forests.	8,872	32	8,872	2	8,870	...	32	1876	
	Papidanda reserved forests,	400	500	521	...	521	189	689	1875	
	Total ...	9,272	532	9,393	2	9,391	189	721		
Jhánsi Division.	Sukwan Dhukwan ...	562	625	630	...	630	150	775	1874	
Lalitpur Division.	Deogarh	998	329	998	...	998	52	381	1875	
	Garauli	705		751	...	751				
	Total ...	123,204	36,903	187,602	483	187,119	11,571	48,474		

Charged in previous years	...	36,903
Ditto 1879-80	...	8,698*
Ditto 1880-81	...	2,873
Total	...	48,474

* Rs. 2,872 of the A.VIII.e expenditure of 1879-80 included in amount charged in previous years.

G. GREIG,

Conservator of Forests, Central Circle, N.-W. P. and Oudh.

NAINI TAL :
The 30th June, 1880.

FORM No. 48.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Prosecutions for breaches of Forest rules, 1879-80.

Forest Division and Civil District.	*Injury to forests by fire.*		*Unauthorized felling or appropriation of wood and minor forest produce.*		*Grazing without permission or in tracts in which grazing is prohibited.*		*Other offences.*		TOTAL.				Remarks.
									Prosecutions.		*Convictions.*		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
1. Kumaun Division ... / Kumaun District ...	7	11	87	169	17	53	46	120	157	353	136	284	One case involving 7 persons was tried by the District Magistrate. The remainder by Divisional Officer.
2. Naini Tal Division ... / Kumaun District ...	2	2	1	1	1	3	2	3	6	9	4	4	One case involving 3 persons tried by the Assistant Commissioner, Naini Tal. The remainder by the Divisional Officer.
3. Ránikhet Division ... / Kumaun District ...	1	6	21	53	6	14	3	18	31	91	29	86	Ten cases tried by the Cantonment Magistrate, Ránikhet.
4. Garhwál Division ... / Garhwál District ...	2	2	14	33	...	...	37	40	53	75	34	41	All tried by the Divisional Officer.
Bijnor District ...	...	...	...	...	1	3	...	...	1	3	1	3	Tried by the District Magistrate.
5. Ganges Division ... / Garhwál District ...	...	...	7	15	...	...	10	15	17	30	16	29	One case tried by the Joint-Magistrate, Saháranpur, two cases by the Divisional Officer, and 14 cases by His Highness the Raja of Tehri.
6. Jhánsi Division ... / Jhánsi District ...	...	...	6	9	1	1	...	...	7	10	7	10	All tried by the district authorities.
7. Lalitpur Division ... / Lalitpur District ...	...	...	6	9	...	...	...	...	6	9	5	8	Ditto ditto.
Total ...	12	21	142	289	26	74	98	196	278	580	232	465	

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 49.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Summary of Revenue of the different Divisions, 1879-80.

Budget Heads Receipts.	Direction.	Naini Tal Division.	Kumaun Division.	Ránikhet Division.	Garhwál and Bijnor Divisions.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY.									
a. Timber	...	...	91,488 15 4	...	33,254 11 6	31,883 8 1	89 3 1	153 9 0	1,56,869 15 0
b. Firewood and Charcoal	...	14,162 5 10	...	3,014 0 8	...	...	812 0 8	...	17,988 5 2
c. Bamboos	...	...	...	...	...	...	19 12 9	1,532 9 0	1,552 5 9
d. Sandal-wood	...	...	...	...	...	...	...	...	...
e. Grass and other Minor Produce	...	92 8 0	...	...	...	...	476 13 3	...	569 5 3
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS :—									
a. Timber	...	2,929 14 0	36,952 8 11	490 14 0	27,761 15 11	4,403 13 5	16 1 5	915 2 4	73,470 6 0
b. Firewood and Charcoal	...	3,342 9 0	3,488 13 10	2,314 7 2	5,260 4 9	211 15 6	175 4 0	39 0 0	14,832 6 3
c. Bamboos	...	15 6 0	6,390 14 10	...	33,162 4 11	11,501 5 11	4 0 0	1,650 7 11	52,724 7 7
d. Grazing and Fodder Grass	...	157 6 0	9,875 9 2	650 0 0	3,607 10 2	747 9 10	1,570 6 2	1,531 15 9	18,140 9 1
e. Other Minor Produce	...	82 4 0	15,212 11 1	572 15 3	6,520 4 0	991 6 1	383 15 8	1,200 7 3	24,963 15 4
III.—CONFISCATED DRIFT AND WAIF WOOD	...	...	373 6 9	...	1,320 12 5	1,083 15 8	...	0 3 0	2,778 5 10
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT :—									
a. Duty on Foreign Timber and other Forest Produce.	...	...	...	...	...	...	...	...	...
b. Revenue from Shared and Private Forests ...	...	...	...	...	...	...	...	...	...
V.—MISCELLANEOUS :—									
a Fines and Forfeitures	...	195 2 0	1,014 0 7	41 8 0	742 11 7	44 11 4	1 9 0	...	2,039 10 6
b. Refunds	...	439 7 3	21 7 9	2 0 0	127 3 2	101 8 0	...	...	691 10 2
c. Other Sources	...	9 0 6	755 4 2	79 5 8	36 11 9	...	98 15 0	...	979 5 1
Total Receipts ...	...	21,425 14 7	1,65,573 12 5	7,165 2 9	1,11,794 10 2	50,969 13 10	3,648 1 0	7,023 6 3	3,67,600 [illegible] 0

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 49.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Summary of Expenditure of the different Divisions, 1879-80.

BUDGET HEADS. A.—CONSERVANCY AND WORKS.	Direction.	Naini Tal Division.	Kumaun Division.	Bánikhet Division.	Garhwál and old Bijnor Divisions.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—									
a. Timber	...	4,617 14 1	19,697 15 1	...	13,225 0 7	7,281 7 10	16 11 3	0 8 0	44,839 8 0
b. Firewood and Charcoal	...	9,569 13 10	...	3,442 3 5	...	...	411 4 11	...	13,423 6 2
c. Bamboos	...	...	...	...	...	...	8 7 2	310 9 6	319 0 8
d. Sandal-wood	...	...	...	...	...	...	...	...	...
e. Grass and other Minor Produce	...	45 0 0	...	...	...	...	316 0 1	...	361 0 1
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS.	...	142 0 11	8,974 5 6	...	6,033 2 11	685 6 0	3 3 10	549 5 6	16,387 8 8
III.—CONFISCATED DRIFT AND WAIF WOOD	...	...	...	...	361 5 7	9 8 0	...	...	370 13 7
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT:—									
a. Duty on Foreign Timber and other forest produce,	...	...	...	...	...	...	...	...	...
b. Revenue from Shared and Private forests ...	...	...	...	...	...	...	...	...	...
V.—RENT OF LEASED FORESTS AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVERNMENT.	...	...	...	...	...	4,000 0 0	...	...	4,000 0 0
VI.—LIVE STOCK, STORES, TOOLS AND PLANT :—									
a. Purchase of Cattle	...	...	...	...	...	...	...	40 0 0	40 0 0
b. Feed and keep of Cattle	...	...	2,426 8 5	...	1,966 5 2	620 1 4	281 3 1	802 15 0	6,097 1 0
c. Stores, tools and plant	92 3 0	388 6 0	377 18 11	39 11 3	1,300 8 6	18 8 0	...	1 13 0	2,226 15 8
VII.—COMMUNICATIONS AND BUILDINGS :—									
a. Roads and Bridges	...	423 3 0	7,921 5 6	155 11 1	10,772 0 0	1,188 9 9	35 0 0	...	20,395 13 4
b. Buildings	33 8 10	324 9 3	1,599 12 5	211 1 10	871 7 9	233 11 7	13 11 4	60 0 0	3,347 15 0
c. Other Works	...	...	40 2 3	...	1,000 0 0	...	...	...	1,040 2 3
VIII.—DEMARCATION, IMPROVEMENT AND EXTENSION OF FORESTS :—									
a. Demarcation	...	82 15 7	706 1 11	93 2 3	525 0 0	...	...	...	1,406 3 9
b. Compensation for Land and Rights	...	1,344 6 10	...	...	...	...	...	...	1,344 6 10
c. Surveys and Working Plans	...	1,252 2 1	...	171 6 8	3,579 10 7	2 2 6	...	...	5,005 5 10
d. Plantations	...	...	...	1,291 2 8	...	...	...	...	1,291 2 8
e. Protection from Fire	...	356 9 1	6,633 14 2	121 10 3	4,178 11 3	128 14 3	150 0 0	...	11,569 11 0
f. Other Works	...	577 5 9	1,611 8 0	904 13 6	60 2 0	...	378 0 3	...	3,531 12 9

IX.—Miscellaneous :—										
a. Refunds	...	...	...	...	...	...	...	...	...	
b. Law charges	...	...	...	...	...	...	...	...	...	
c. Other charges	...	0 11 0	46 4 0	27 9 3	169 6 5	143 11 6	95 14 1	2 9 0	486 1 3	
Total, A.—Conservancy and Works ...	125 11 10	19,125 0 8	50,035 11 2	6,457 8 3	44,050 12 9	14,312 0 9	1,709 8 0	1,767 12 0	1,37,584 1 4	
I.—Salaries :—										
a. Conservators	12,000 0 0	...	...	...	...	...	...	...	12,000 0 0	
b. Superior officers	5,400 0 0	...	6,381 11 7	6,000 0 0	10,950 0 0	3,090 4 5	...	...	31,822 0 0	
c. Subordinate forest and depôt establishments ...	...	1,046 8 7	9,153 7 3	1,915 2 7	7,644 9 8	1,735 0 0	1,093 8 0	1,558 0 4	24,146 4 5	
d. Office establishments	3,887 11 4	239 10 10	2,146 10 7	477 10 8	2,007 5 10	1,029 0 0	70 0 0	203 0 0	10,061 1 3	
e. Deputation and special allowances	...	...	3,000 0 0	1,800 0 0	...	...	...	...	4,800 0 0	
II.—Travelling allowances:—										
a. Conservators	1,095 6 0	...	...	...	...	...	...	...	1,095 6 0	
b. Superior officers	124 0 0	412 0 0	1,465 0 0	505 0 0	2,411 0 0	631 0 0	...	...	5,548 0 0	
c. Subordinate forest and depôt establishments ...	...	...	113 11 1	...	...	...	...	...	113 11 1	
d. Office establishments	47 2 3	1 9 9	418 3 9	23 1 0	381 10 0	282 2 2	...	...	1,153 12 11	
III.—Contingencies :—										
a. Stationery	23 10 0	3 9 6	42 13 2	7 12 9	62 7 6	23 8 2	12 4 0	13 15 0	189 15 11	
b. Carriage of tents and records	458 4 8	96 9 6	380 4 8	119 5 8	325 2 1	230 0 9	...	...	1,609 11 4	
c. Rents, rates and taxes	23 0 0	...	28 0 0	...	22 0 0	...	...	...	73 0 0	
d. Pay of police guards	306 0 0	...	...	...	...	...	...	...	306 0 0	
e. Official postage	213 11 0	4 6 6	115 4 6	35 6 6	90 7 0	41 9 0	21 9 6	32 3 6	554 9 6	
f. Sundries	308 4 3	75 6 1	367 12 0	16 7 6	309 10 5	85 1 2	3 5 0	10 8 0	1,176 6 5	
Total, B. Establishments ...	23,887 1 6	1,879 12 9	23,612 14 7	10,899 14 8	24,204 4 6	7,147 9 6	1,200 10 6	1,817 10 10	94,649 14 10	
Grand Total of Expenditure ...	24,012 13 4	21,004 13 5	73,648 9 9	17,357 6 10	68,255 1 3	21,459 10 3	2,910 2 6	3,585 6 10	2,32,234 0 2	

Naini Tal :
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 50.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Account current for the year 1879-80.

Heads of Account.	Rs. a. p.	Rs. a. p.
To Cash balance on 1st April, 1879	23,701 9 4	23,701 9 4
To Revenue received in cash	...	3,33,502 10 10
To Revenue adjusted by book transfer. Public Works Department ...	16,958 1 7	
Military Department, Bengal ...	17,104 0 7	
Telegraph Department... ...	41 0 0	34,098 2 2
To Remittances from State Treasuries	...	2,34,417 3 10
To Remittances by transfer from other Departments. Public Works Department ...	221 5 1	
Military Department, Bengal ...	421 1 11	
Civil Department	195 11 0	838 2 0
To contribution to funds ... Uncovenanted Service Family Pension Fund.	1,141 10 0	
Military Fund	261 4 7	
Orphan Fund	116 13 0	1,519 11 7
To Advances recovered	43,118 5 11	43,118 5 11
To Imprest advance	45 0 0	45 0 0
To Interdivisional transfers	178 0 0	178 0 0
Total ...	...	6,71,418 13 8

Heads of Account.	A. Rs. a. p.	B. Rs. a. p.	Rs. a. p.	Rs. a. p.
By Expenditure of the Department	1,37,584 1 4	+94,649 14 10	2,32,234 0 2	3,32,234 0 2
By Revenue Remittances to State Treasuries			...	3,30,945 13 0
By Revenue adjusted by book transfer			34,098 2 2	34,098 2 2
By Advances recoverable			45,012 8 3	45,012 8 3
By Imprest advances			...	745 0 0
By Interdivisional transfers			...	178 0 0
By Cash balance on 31st March, 1880			...	28,295 6 1
Total ...			...	6,71,418 13 8

NOTE.—Comptroller-General has cut out the details of divisions as being unnecessary.

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. Provinces and Oudh.

FORM No. 51.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of Outstandings and Liabilities on account of Contractors and Disbursers, 1879-80.

Division.	Department Debtor.			Department Creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstanding).	By Department (Liabilities).
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Direction	...	3,242 8 8	3,242 8 8	194 6 0	3,163 2 8	3,357 8 8	115 0 0	...
Kumaun	...	21,202 11 4	21,202 11 4	2,875 0 0	19,127 11 4	22,002 11 4	800 0 0	...
Naini Tal	64 10 8	7,029 15 4	7,094 10 0	97 11 5	15,427 9 8	15,525 5 1	8,495 5 9	64 10 8
Ránikhet	...	996 4 5	996 4 5	...	996 4 5	996 4 5	...	...
Garhwál	...	7,220 5 9	7,220 5 9	5,265 5 3	a 2,362 7 6	7,627 12 9	407 7 0	...
Ganges	...	1,700 0 0	1,700 0 0	1,640 0 0	b 2,360 0 0	4,000 0 0	2,300 0 0	...
Jhánsi	...	1,067 0 5	1,067 0 5	12 0 0	1,065 4 8	1,077 4 8	10 4 3	...
Lalitpur	...	659 8 0	659 8 0	241 8 0	510 0 0	751 8 0	92 0 0	...
Total	64 10 8	43,118 5 11	43,183 0 7	10,325 14 8	45,012 8 3	55,333 6 11	12,220 1 0	64 10 8

a Closing balance in last year's returns shown as Rs. 7,015-5-3.
The difference is thus explained :—

	Rs.
Transferred to the new Ganges Division	1,600
Outstandings charged as final expenditure in former years, and recovered in May, 1879 ...	100
Final expenditure outstanding written off as irrecoverable by order of Local Government...	50
Total, difference	1,750

Rs.	
b 1,600	transferred from Garhwál Division from balance of 1878-79.
40	ditto Bhágirathi ditto ditto.
1,640	

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 52.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of Outstandings on account of Revenue, 1879-80.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction	Sale of timber and other minor produce ...	...	...	...	...	...	
Kumaun	Ditto ditto ...	1,298 4 4	...	1,298 4 4	562 10 7	*735 9 9	* G. O. No. 484, dated 23rd April, 1880, sanctions the writing off of this.
Naini Tal	Ditto ditto ...	..	13,956 1 2	13,956 1 2	13,956 1 2	...	
Rânikhet	Ditto ditto ...	246 4 4	1,011 7 0	1,257 11 4	1,257 11 4	...	
Garhwál	Ditto ditto ...	...	210 14 0	210 14 0	210 14 0	...	
Ganges	Ditto ditto ...	...	...	...	...	...	
Jhánsi	Ditto ditto ...	...	...	...	...	...	
Lalitpur	Ditto ditto ...	...	66 0 0	66 0 0	66 0 0	...	
	Total ...	1,544 8 8	15,244 6 2	16,788 14 10	16,053 5 1	735 9 9	

NAINI TAL:
The 30th June, 1880

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh

FORM No. 53.—(*Suggested*)

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of trees felled during the year 1879-80.

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year. No.	On hand from previous year. C. ft.	Felled during current year. No.	Felled during current year. C. ft.	Total. No.	Total. C. ft.	Disposed of during current year. How disposed of.	Disposed of during current year. No.	Disposed of during current year. C. ft.	Closing balance. No.	Closing balance. C. ft.	Remarks
Naini Tal.	Naini Tal...	Maulani ...	Oak ...	...	...	4	18,077	4	18,077	Converted into fuel for Commissariat Department and Station.	4	18,077	...	...	6,484 maunds.
		Kahala ...	„ ...	...	...	4		4			4		...	...	
		Shamkhet ...	Chir ...	...	...	383		383			383		...	...	
		Jabar Bhowali ...	Oak ...	...	...	103		103			103		...	...	
		Charta ...	Chir ...	...	...	30		30			30		...	...	
			Do. dry ...	...	...	16		16			16		...	...	
			Do. poles ...	...	...	50		50			50		...	...	
			Oak ...	...	...	11		11			11		...	...	
			Do. dry and fallen,	...	...	21		21			21		...	...	
			Miscellaneous ...	...	...	97		97			97		...	...	
			Do. small ...	...	...	4		4			4		...	...	
		Dhobighát ...	Miscellaneous ...	...	...	10		70			10		...	...	
		Kahala ...	Chir ...	...	...	11	20,302	11	20,302	Converted into scantings.	10	...	1	48	
		Arukhan ...	Do. ...	...	...	11		11			11	20,254	...	...	
		Hinnon ...	Do. ...	...	...	401		401			401	...	...	...	
			Total ...	...	...	1,156	38,379	1,156	38,379	...	1,155	38,331	1	48	
Kumaun.	Bhabar ...	...	Sál ...	...	...	1,533	22,026	1,533	22,026	* Converted into logs and karies.	1,533	22,026	...	...	* Mature trees.
	Chilkia ...	Mohan ...	Jaman ...	...	...	3	30	3	30		3	30	...	...	
	...	...	Chir ...	...	...	22	1,301	22	1,301		22	1,301	...	...	
	...	...	Katrukh ...	...	...	2	20	2	20		2	20	...	...	
	Bhabar ...	Various ...	Inferior Katrukh†	...	...	47,258	94,516	47,258	94,516	Left on the ground ...	47,258	94,516	...	...	† Cut in thinning forests chiefly poles and saplings.
	Kotah. ...	Bhandar Pani ...	Sál ...	...	...	449	14,814	449	14,814	Converted into logs and karies.	449	14,814	...	...	
			Jamun ...	...	...	10	114	10	114		10	114			
			Haldu ...	...	...	1	12	1	12		1	12			
	Bhabar Talah Desh fire line.	...	Sál ...	...	...	2,197	18,858	2,197	18,858	Exported by purchasers.	2,197	18,858	...	...	Cut on fire line.
			Haldu ...	...	...	77	4,620	77	4,620		77	4,620	...	...	
			Sein ...	...	...	2	80	2	80		2	80	...	...	
			Katrukh ...	...	...	42	820	42	420		42	820	...	...	
			Total ...	...	...	‡51,596	157,211	51,596	1,57,211	...	51,596	1,57,211	...	...	‡ Of which 47,258 trees = 92,516 cubic feet. were poles and saplings.

FORM No. 53.—(*Suggested*).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of trees felled during the year 1879-80—(continued).

Division.	Forest range	Locality.	Description of trees.	On hand from previous year. No.	On hand from previous year. C. ft	Felled during current year. No.	Felled during current year. C. ft.	Total. No.	Total. C. ft.	Disposed of during current year. How disposed of.	Disposed of during current year. No.	Disposed of during current year. C. ft.	Closing balance. No	Closing balance. C. ft.	Remarks.
Ránikhet.	Ránikhet ...	Chaubatia Chomode al.	Chir ...	...	...	114	7,068	114	7,068	Converted into fuel for the Commissariat Department.	114	7,068	...	...	Mature trees.
			Oak ...	...	...	154	9,394	154	9,394		154	9,394	...	...	
			Rhododendron ...	...	...	165	6,600	165	6,600		165	6,600	...	...	
			Alder ...	...	...	30	1,850	30	1,890		30	1,890	...	...	
			Ayar ...	...	...	84	1,512	84	1,512		84	1,512	...	...	
		Padholi ...	Chir ...	...	...	85	5,270	85	5,270		85	5,270	...	...	
				65	2,297	...	...	65	2,297		65	2,297	...	...	
			Total ...	65	2,297	632	31,734	697	34,031	...	697	34,031	...	...	
Garhwál.	Kotri Dún,	Haldgadi ...	Sein ...	...	...	14	1,563	14	1,563	Sawn into karies.	11	1,296	3	267	* Ditto.
		Kushamghâti ...	Do. ...	...	...	21	1,599	21	1,599		18	1,370	3	229	
			Total ...	...	...	35	3,162	35	3,162	...	29	2,666	6	496	
Ganges.	Gorighât ...	Above Hursil ...	Deodar ...	1,097	41,388	...	..	1,097	41,388	Converted into ballas, bullies, and tors.	...	..	1,097	41,388	Have since been converted into sleepers.
		Tama Khani ...	Kikar ...	...	...	445	1,694	445	1,694		300	1,192	145	502	
			Siras ...	...	...	762	3,100	762	3,100		312	1,240	450	1,860	
			Bel ...	...	...	511	1,904	511	1,904		211	802	300	1,102	All Rokat timber, the trees varying from 18 to 36 inches in girth.
			Jaman ...	...	...	410	1,714	410	1,714		200	808	210	906	
			Amaláts ...	...	...	317	1,260	317	1,260		317	1,260	...	...	
			Patri ...	...	...	506	2,025	506	2,025		506	2,025	...	...	
			Kuni ...	...	...	100	406	100	406		100	406	...	...	
			Hair ...	..	...	770	3,211	770	3,211		110	405	660	2,806	
			Mowa ...	...	...	610	2,125	610	2,125		110	440	500	2,685	
			Bakli ...	...	...	102	409	102	409		102	409	...	...	
			Total ...	1,097	41,388	4,533	17,848	5,630	59,236	...	2,268	8,987	3,362	50,249	

Jhansi.	Jhansi ..	Babina Circle ...	Kardahi and Dhow,	647	1,941	101	303	748	2,244	Government use 5 Sold ... 743	748	2,244	...	...
	...	Ditto ...	Teak ...	54	162	575	1,725	629	1,887	Sold ...	330	990	299	897
			Total ...	701	2,103	676	2,028	1,377	4,131		1,078	3,234	299	897
Lalitpur.	Karera Talbahat.	Karera ...	Sagon ...	...	...	200	322	200	322	Converted into ballies.	200	322	...	...
	Maraura ...	Sonrall ...	Bel ...	...	...	26	186	26	186		26	186	...	...
	Bansi ...	Horaspur ...	Do. ...	...	...	1	6	1	6		1	6	...	...
			Total ...	...	...	227	514	227	514		227	514	...	...
			GRAND TOTAL ...	1,863	45,768	58,855	2,50,876	60,718	2,96,664		57,050	2,44,974	3,668	51,690

ABSTRACT SUMMARY OF TREES FELLED DURING THE YEAR.

	No.	
Oak Trees ...	297	
Chir " ...	1,123	
Rhododendron trees ...	165	
Alder " ...	30	
Ayar " ...	84	
Sál " ...	4,179	
Teak " ...	575	
Jaman " ...	423	
Haldu " ...	78	
Sein " ...	37	
Dhow " ...	101	
Sagon " ...	200	
Kokat " ...	47,302	Cut in thinning forests in the Kumaun Division; mostly poles and saplings.
Babul " ...	445	
Mowah " ...	610	
Kokat " ...	3,095	Cut in the Garhwál forests; mostly small trees.
Miscellaneous " ...	111	
Total ...	58,855	

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 54.—(*Suggested*).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of logs, sleepers, and other scantlings cut and exported during the year 1879-80.

Division.	Forest range.	Locality.	Description of timber and scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.	
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C ft.
KUMAUN ...	Bhabar forest,	Various ...	Sál logs ...	160	7,794	279	13,415	439	21,209	Carried to depôt ...	388	18,826	51	2,883
			„ karis and joras,	10,095	a+22 15,907	15,757	25,142	25,852	b+66 41,071	Ditto ...	16,644	26,375	9,208	14,762
			„ sleepers ...	28	1.7	10	33	38	150	Ditto ...	32	130	6	20
			„ planks ...	...	...	4	4	4	4	Ditto ...	4	4	...	...
			Haldu karis ...	97	137	16	26	113	c163	Ditto ...	113	175	...	...
			Sein „ ...	92	151	37	56	129	+2 207	Ditto ...	129	207	...	...
			Jaman „ ...	113	180	90	150	203	330	Ditto ...	126	d202 +3	77	125
			Kukat „ ...	...	...	14	23	14	23	Ditto ...	14	23	...	...
			Chir „ ...	...	...	793	1,301	793	1,301	Ditto ...	587	958	206	343
				10,585	24,308	difference 78 17,000	40,150	27,585	64,536	...	18,037	46,903	9,548	17,633
NAINI TAL...	Naini Tal...	Hinan ...	Chir kares ...	...	...	5,899	12,557	5,899	12,557	...	...	...	5,899	12,557
			„ planks ...	...	...	10,986	7,745	10,986	7,745	...	...	...	10,986	7,745
			Hard wood ...	...	...	e11,486	Mds.	11,486	Mds.	Carried to Naini Tal depôt.	832			
		Various ...								Carried to Kaila Khan depôt.	10,654			
			Chir wood ...	...	...	f24,006	Mds.	24,006	Mds.	Ditto ...	11,486	Mds.	...	...
											24,006	Mds.	...	...
RÁNIKHET ...	Ránikhet ...	Various ...	Firewood ...	...	Pieces fuel	16,885 35,492	20,302 Mds.	16,885 35,492	20,302 Mds.	...	...	...	16,885	20,302
										...	35,492	Mds.	...	...
				...	...	g48,739	Mds.	48,739	Mds.	Delivered to Commissariat Department.	21,208	Mds.	27,531	...
				...	...	48,739	Mds.	48,739	Mds.	...	21,208	Mds.	27,531	...

GARHWÁL ...	Pálti Dún ...	...	*h* Sál karies ...	27,3[illegible]5	38,723	1,319	1,497	28,634	40,220	Carried to depôt ...	28,634	40,220	...	...
			Sein „ ...	26,[illegible]09	38,983	442	561	26,951	39,544	Ditto ...	26,951	39,544	...	...
	Gori Ghát ...	Various ...	Kúkat ballas ...	685	4,662	...	...	685	4,662	Transferred	685	4,662	...	...
			„ tors ...	5,617	11,614	...	...	5,617	11,614	to	5,617	11,614	...	...
			„ ballies ...	1,298	3,651	...	...	1,298	3,651	Ganges Division	1,298	3,651	...	...
	Kotri Dún ...	...	Sein karies ...	...	...	803	1,085	803	1,085	...	...	...	803	1,085
				61,424	97,633	2,564	3,143	63,988	1,00,776	...	63,185	99,691	803	1,085
GANGES ...	Gorighát ...	Various ...	Kúkat ballas ...	...	...	905	6,814	905	6,814	Carried to depôt ...	905	6,814	...	...
			„ tors ...	...	...	6,217	12,855	6,217	12,855	Ditto ...	6,217	12,865	...	...
			„ ballies ...	...	...	3,013	9,245	3,013	9,245	Ditto ...	3,013	9,245	...	...
				...	...	*i* 10,135	28,914	10,135	28,914	...	10,135	28,914	...	...
JHÁNSI ...	Jhánsi forests.	Babina ...	Balies ...	701	2,103	1,498	4,494	2,199	6,597	Carried to depôt...	822	2,466		
										Government use and sold.	1,078	3,234		
											1,900	5,700	299	897
				701	2,103	1,498	4,494	2,199	6,597	...	1,900	5,700	299	897

a. Difference of 22′ as per Form No. 54 for last year.
b. Difference of 66′ as shown in Form No. 5 for June, 1879.
c. Difference of 12′ explained in Form No 5 for April, 1879.
d. Difference of 3′ explained in Form No. 5 for June, 1879.
e. Of this 784 mds. were prepared from standing trees, and the remaining from stumps and fallen wood.
f. Of this 5,700 mds. were prepared from standing trees and the remaining from stumps and fallen wood.
g. Prepared from dry fallen wood.
h. 10,285=13,869 sál karies having been added to sein karies in last year's statement by a clerical error in Form No. 5 of Garhwál Division, for January, 1878.
i. Of these 7,600=19,927 were transferred from Garhwál Division, *vide* Garhwál Division Form No. 5 for December, 1879.

FORM No. 54.—(*Suggested.*)

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of logs, sleepers, and other scantlings cut and exported during the year 1879-80

Division.	Forest range.	Locality.	Description of timber and scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.	
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.
LALITPUR ...	Lalitpur forests,	Various ...	Ballies ...	j ...	...	333	533	333	533	Carried to depôt ...	333	533	...	...
		Total ...	Timber, pieces ...	72,710	1,24,044	48,415	97,536	1,21,125	2,21,658	...	93,590	1,81,741	27,535	39,917
			Fuel, mds. ...	...	...	difference 84,231	+78 Mds.	84,231	Mds.	...	56,700	mds.	27,531	mds.
			Summary.											
			Sál karis, &c., ...	...	...	17,969	40,091							
			Sein karis, &c. ...	...	...	1,282	4,702							
			Chir karis, &c., ...	...	...	17,678	21,603							
			Jamun karis, &c ...	...	...	99	150							
			Haldu karis, &c., ...	...	...	16	26							
			Other kinds (pieces)	...	...	11 980	33,954							
			Fuel ...	...	...	84 231	Mds.							
			Total ...	...	Pieces ...	48,415	97,536							
					Fuel ...	84,231	Mds.							

j. For the omission of last year's closing balance *vide* Comptroller-General's objection statement for June, 1880.

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 55.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement of timber and other produce brought to depôt from the different Forest Divisions, 1879-80.

Division.	Forest.	Description of Timber, &c.	No. of— Pieces.	No. of— Cubic feet.	Total of each Division. Pieces.	Total of each Division. Cubic feet.
Kumaun ...	Bhábar Forests.	Sál logs	388	18,826		
		„ karis	16,393	25,717		
		„ sleepers	32	130		
		„ other kinds	255	662		
		Haldu karis	113	175		
		Sein karis	128	204		
		„ sleepers	1	3		
		Jamun karis	126	202		
		Chir karis	587	958		
		Kukat karis	14	23	18,037	46,900
Naini Tal ...	Various ...	Firewood	Mds. 35,492	...	35,492	..
		Lime	Mds. 90	...	90	...
Ránikhet ...	Various ...	Firewood	Mds 21,208	...	21,208	...
Garhwál ...	Various ...	Sál karis	28,634	40,270		
		Sein karis	26,951	39,541		
		Drift wood	56	566	55,641	80,374
Ganges ...	Various ...	Deodar sleepers	1,745	3,093		
		Deodar rejected sleepers ...	800	1,067		
		„ joined „ ...	455	948		
		„ pieces „ ...	1,118	...		
		Sein karis	23,358	34,509		
		Kukat ballas, &c.	10,135	28,914	37,611	68,531
Jhánsi ...	Various ...	Ballis	822	2,466	822	2,466
		Bamboos	3,222	...	3,222	...
		Baskets	1,301	...	1,301	...
		Karis	4,215	...	24,077	...
		Kiras	19,862	...		
		Firewood	Mds. 2,424	...	3,573	...
		Charcoal	„ 1,149	...		
Lalitpur ...	Various ...	Ballis	333	533	333	533
		Bamboos	35,574	...	35,574	...
	Grand total,	Timber	...	...	1,12,444	1,98,804
		Bamboos	...	...	38,796	...
		Baskets	...	...	1,301	...
		Kiras and kurias	...	...	24,077	...
		Firewood and Charcoal ...	Maunds	...	60,273	...
		Lime	„	...	90	...

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 56.—(*Prescribed.*)

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Account of timber and other produce, 1879-80.

	Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
	Balance in hand at commencement of year.				
Kumaun Division.	Sál logs	223	9,945		
	„ karis	24,763	36,847		
	„ sleepers	144	511		
	„ other kinds	37	562		
	Haldú, all kinds	309	510		
	Timber, all other kinds	4,154	6,675		
				29,630	55,950
Naini Tal Divn.	Firewood	Mds. ...	...	...	...
Ránikhet Divn.	Firewood	Mds. 1,465	...		
				1,465	...
Garhwál Division.	Sál karis	1,567	2,394		
	„ tallis	1,130	1,695		
	„ other kinds	1,817	15,126		
	Timber, all other kinds...	89	139		
	Drift wood	590	5,900		
				5,193	25,254
Jhánsi Division.	Ballis	701	2,103		
				701	2,103
	Bamboos	786	...		
				786	...
	Kiras	3,265	...		
	Kúrias	16,092	...		
				19,357	...
	Firewood	Mds. 1,064	...		
	Charcoal	„ 289	...		
				1,353	...
	Grass	Bdls. 85,000	...		
				85,000	...
Lalitpur Divn.	Ballis	1,849	2,958	1,849	2,958
	Bamboos	2,80,099	...		
				2,80,099	...
Total.	Timber	...	...	37,378	85,365
	Bamboos	...	...	2,80,885	...
	Kiras and kurias	...	...	19,357	...
	Firewood and charcoal	Maunds ...	...	2,818	...
	Grass	Bundles ...	...	85,000	...
	Received during the year.				
Kumaun Division.	Sál logs	388	18,826		
	„ karis	16,393	25,717		
	„ sleepers	32	130		
	„ other kinds	256	662		
	Haldú, all kinds	113	175		
	Timber, all other kinds	856	1,490		
				18,037	46,900
Naini Tal Divn.	Firewood	Mds. 33,492	...		
				33,492	...
	Lime	Mds. 90	...		
				90	...
Ránikhet Divn.	Firewood	Mds. 21,208	...		
				21,208	...
Garhwál Divn.	Sál karis	28,734	40,270		
	Timber, all other kinds	26,951	39,544		
	Drift wood	56	560		
				55,641	80,374
Garges Divn.	Deodar sleepers	1,745	3,093		
	„ rejected, joined, &c., sleepers ...	2,373	2,0 5		
	Timber, all other kinds...	33,493	63,423		
				37,611	68,531
Jhánsi Division.	Ballis	822	2,466	822	2,466
	Bamboos	3,222	...	3,222	...
	Baskets	1,301	...	1,301	...
	Kiras	4,215	...	24,077	...
	Kurias	19,862	...		...
	Firewood	Mds. 2,424	...	3,573	...
	Charcoal	„ 1,149	...		...
	Grass ... ... Bundles ...	...	...	...	...

FORM No. 56.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Account of timber and other produce, 1879-80—(continued).

	Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
LALITPUR DIVN.	Ballis	333	533	333	533
	Bamboos	35,574	...	35,574	...
	Total ... Timber			1,12,444	1,98,804
	Bamboos			38,796	...
	Baskets			1,301	...
	Kiras and kurias			24,077	...
	Firewood and charcoal ...			Mds. 60,278	...
	Lime			„ 90	...
	Grass			Bdls. ...	...
	Grand Total ... Timber			1,49,817	2,84,169
	Bamboos			3,19,681	...
	Baskets			1,301	...
	Kiras and kurias ...			43,434	...
	Firewood and charcoal ...			Mds. 63,091	...
	Lime			„ 90	...
	Grass			Bdls. 85,090	...
	Removed by purchasers.				
KUMAUN DIVISION.	Sal logs	516	24,419		
	„ karis	28,588	44 066		
	„ sleepers	120	445		
	„ other kinds	286	940		
	Haldú, all kinds	420	683		
	Timber, all other kinds	3,373	5,426		
				33,303	75,979
NAINI TAL DIVN.	Firewood	Mds. 35,492	...		
				35,492	...
	Lime	Mds. 72	...		
				72	...
RÁNIKHET DIVN.	Firewood	Mds. 22,673	...		
				22,673	
GARHWÁL DIVISION.	Sál karis	11,623	15,822		
	„ ballis	1,130	1,695		
	„ other kinds	1,786	14,922		
	Timber, all other kinds	4,414	6,305		
	Drift wood	646	6,400		
				19,599	47,204
GANGOES DIVN.	Deodar sleepers	1,745	3,093		
	„ rejected, joined, &c., sleepers ...	2,373	2,015		
	Timber, all other kinds	33,445	63,035		
				37,563	68,143
JHÁNSI DIVISION.	Ballis	1,217	3,651		
				1,217	3,651
	Bamboos	2,154	...		
				2,154	...
	Baskets	518	...		
				518	...
	Kiras	4,943	...		
	Kurias	29,346	...		
				34,289	...
	Firewood	Mds. 2,765	...		
	Charcoal	„ 1,067	...		
				3,832	...
	Grass	Bundles 27,608	...		
				27,608	...
LALITPUR DIVN.	Ballis	2,179	3,487	2,179	3,487
	Bamboos	3,06,510	...		
				3,06,510	...
TOTAL.	Timber	...	...	93,861	1,96,464
	Bamboos	...	...	3,18,664	...
	Baskets	...	...	518	...
	Kiras and kurias	...	...	34,289	...
	Firewood and charcoal	Mounds	...	61,997	...
	Lime	„	...	72	...
	Grass	Bundles	...	27,608	...
	Lost or used by the Department.				
KUMAUN DIVS.	Sál kobis	...	2		...
	Chir sleepers	3	11		
				3	13
NAINI TAL DIVN.	Lime	Mds. 10	...		
				10	...
GANGOES DIVN.	Sein karis	48	388		
				48	388

FORM No. 56.

Forest Department, Central Circle, N.-W. Provinces and Oudh.

Account of timber and other produce, 1879-80—(concluded)

	Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Lalitpur Divn. Jhansi Division.	Ballis	5	15	5	15
	Bamboos	21	...	21	...
	Kiras	20	...	873	...
	Kurias	553	...		
	Charcoal	Mds. 55	...	55	...
	Grass	Bdles. 33,700	...	33,700	...
	Ballis	3	4	3	4
	Total ...	Timber		59	420
		Bamboos		21	...
		Kiras and kurias ...		373	...
		Charcoal		Maunds, 55	...
		Lime		" 10	...
		Grass		Bdls., 33,700	...
	Otherwise removed from the depôt.				
Garhwal Divn.	Sál, other kinds	6	...	...	...
	Timber, all other kinds...	22,626	33,378	22,632	33,378
	Total ...	Timber		22,632	33,378
	Balance in hand at close of year.				
Kumaun Division.	Sál logs	95	4,352	...	...
	" karis	12,568	16,498	...	...
	" sleepers	56	196	...	...
	" other kinds	6	282	...	...
	Haldu, all other kinds	2	2	...	...
	Timber, all other kinds...	1,634	2,628	14,361	25,958
Garhwal Divn. Naini Tal Divn.	Lime	Mds. 8	...	8	...
Garhwal Divn. Rámkhet Divn.	Firewood	...	...	...	...
	Sál karis	18,578	26,842		
	" other kinds	25	204	18,603	27,046
Gangeswal Divn.	Timber	...	...	...	...
Jhansi Division.	Ballis	301	903	301	903
	Bamboos	1,833	...	1,833	...
	Baskets	783	...	783	...
	Kiras	2,517	...	8,772	...
	Kurias	6,255	...		
	Firewood	Mds., 723	...	1,039	...
	Charcoal	" 316	...		
	Grass	Bdls. 23,692	...	23,692	...
Lalitpur Divn.	Bamboos	9,163	...	9,163	...
	Total ...	Timber		33,265	53,907
		Bamboos		10,996	...
		Baskets		783	...
		Kiras and kurias ...		8,772	...
		Firewood and charcoal ...		Mds. 1,039	...
		Lime		" 8	...
		Grass		Bdls. 23,692	...
	Grand Total ...	Timber		1,49,817	2,84,169
		Bamboos		3,19,681	...
		Baskets		1,301	...
		Kiras and kurias ...		43,434	...
		Firewood and charcoal ...		Mds 63,091	...
		Lime		" 90	...
		Grass		Bdls 85,000	...

Naini Tal:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 59.

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Statement showing the Revenue derived from, and Expenditure incurred on, Timber and other produce sold to Public Departments from Depôt during the year 1879-80.

Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost of Forest Department. Timber expenses under A.I.	Cost of Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost of Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.
					Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Commissariat Department, Naini Tal.	Firewood ...	Mds. 35,225	40 0 0	Cent. Mds....	14,090 0 0	14,090 0 0	...	9,570 0 0	690 0 0	10,260 0 0	3,830 0 0	...
Commissariat Department, Ránikhet.	Ditto ...	" 2,094	Various.		390 0 0	390 0 0	...	1,440 0 0	580 0 0	2,020 0 0	994 0 0	...
	Chir firewood ...	" 4,932	12 12 0	Ditto ...	629 0 0	629 0 0	...					
	Oak, &c., firewood ...	" 15,647	12 12 0	Ditto ...	1,995 0 0	1,995 0 0	...					
Public Works Department, Military Works, Bareilly Division.	Sál karis... ...	32=53′	1 8 0	Cubic foot...	80 0 0	80 0 0	...	43 0 0	20 0 0	63 0 0	17 0 0	...
Narora Division, Lower Ganges Canal.	Sál logs	18=924′	2 4 0	Ditto ...	2,079 0 0	2,079 0 0	...	881 0 0	440 0 0	1,330 0 0	749 0 0	...
	Ditto	13=609′	2 4 0	Ditto ...	1,370 0 0	1,370 0 0	...	576 0 0	290 0 0	866 0 0	504 0 0	...
Northern Division, Ganges Canal.	Kukat ballas ...	905= 6,814′	36 0 0	Score ...	1,629 0 0	1,629 0 0	...	2,639 0 0	316 0 0	2,955 0 0	1,754 0 0	...
	" tora ...	6,217=12,855′	7 0 0	Ditto ...	2,176 0 0	2,176 0 0	...					
	" ballis ...	3,013= 9,245′	6 0 0	Ditto ...	904 0 0	904 0 0	...					
Dehli district, Rájputana State Railway.	Deodar sleepers ...	74=257′	4 0 0	Sleeper ...	296 0 0	296 0 0	...	231 0 0	27 0 0	258 0 0	38 0 0	...
	Ditto ...	1,410=2,292′	2 0 0	Ditto ...	2,820 0 0	2,820 0 0	...	2,115 0 0	250 0 0	2,365 0 0	455 0 0	...
Cawnpore and Farukhabad Light Railway.	Ditto ...	261=544′	2 10 0	Ditto ...	685 0 0	685 0 0	...	1,698 0 0	202 0 0	1,900 0 0	223 0 0	...
	Deodar joined sleepers,	455=948	1 10 0	Ditto ...	739 0 0	739 0 0	...					
	Pieces ditto,	1,116=0	0 10 0	Piece ...	699 0 0	699 0 0	...					
Total ...	...	...	...	...	30,581 0 0	30,581 0 0	...	19,193 0 0	2,824 0 0	22,017 0 0	8,564 0 0	...
						Deduct surplus (or deficit)					...	...
						Balance for the Department					8,564 0	...

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 60.—(*Suggested*).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Abstract showing the value of Timber and of Live and Dead-stock for the year 1879-80.

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	
		Rs		Rs.		Rs.		Rs.		Rs.	
Directors' Division.											
Buildings	2	10,000	...	...	2	10,000	...	...	2	10,000	* Includes two tents with Rs. 400.
Stores, tools and plant ...	* 46	600	†6	25	52	625	‡5	10	47	615	† Chairs, *vide* sanction No. 22 of 1879-80.
Total ...	48	10,600	6	25	54	10,625	5	10	49	10,615	‡ Office chairs.
Kumaun Division.											
Sál logs...	293	16,460	338	28,239	611	44,699	516	37,094	95	7,605	
„ karis	24,763	24,658	16,393	41,789	41,156	66,447	28,588	48,518	12,568	17,929	
„ sleepers	144	681	32	195	176	876	120	708	56	168	
„ other kinds	37	499	255	1,655	292	21,54	286	1,854	6	300	
Haldú, all kinds	309	881	113	22	422	403	(*a*) 420	403	2	...	(*a*) Rs. 44 allowed for depreciation.
Timber, all other kinds ...	4,154	1,967	856	1,660	5,010	3,627	3,376	2,969	1,634	658	3 Chir sleepers worth Rs. 10 lost in transit to Bareilly.
	29,630	44,646	18,037	73,560	47,667	1,18,206	33,306	91,546	14,361	26,660	
Buildings	16	11,599	...	...	16	11,599	...	...	16	11,599	
Elephants	2	4,000	...	...	2	4,000	...	...	2	4,000	
Tools and plant	4,379	5,860	539	548	4,918	6,408	§ 679	660	4,239	5,748	§ Broken tools converted into new ones.
Total ...	3,407	66,105	18,576	74,108	52,603	1,40,213	33,985	92,206	18,618	48,007	

Naini Tal Division.										
Chir timber karis ...	...	...	...	5,899	11,240	5,899	11,240	...	...	5,899	11,240
Ditto planks ...	...	...	...	10,986		10,986		...	...	10,986	
Tools and plant ...	...	6,526	982	1,282	380	7,808	1,370	*57	95	7,751	1,275
Buildings ...	...	1	50	1	270	2	320	...	65	2	255
Total ...		6,527	1,032	18,168	11,898	24,695	12,930	57	160	24,638	12,770
Ránikhet Division.											
Buildings ...	...	10	4,041	2	138	12	4,179	...	...	12	4,179
Tools and plant ...	...	6,257	2,125	25	40	6,282	2,165	†22	17	6,260	2,148
Firewood ...	...	mds. 1,465	310	mds. 629	80	mds. 2,094	390	mds. 2,094	390	...	...
Ditto ...	...	...	...	cubic ft. 1,20,552	7,156	cubic ft. 1,20,552	7,156	cubic ft. 42,720	2,624	cubic ft. 77,832	4,532
Total		6,267 and mds. 1,465	6,476	27 and firewood.	7,414	6,294 and firewood.	13,890	22 and firewood.	3,031	6,272 and firewood.	10,859
Garhwál Division.											
Sál karis ...	...	1,567	2,294	28,634	39,726	30,201	42,020	11,623	14,862	18,578	27,158
,, other kinds ...	...	2,947	22,634	...	...	2,947	22,634	2,922	22,531	25	96
Timber, other kinds...	...	679	587	27,007	25,172	27,686	25,759	27,686	25,585	...	‡7
											§174
Total ...		5,193	25,515	55,641	64,898	60,834	90,413	42,231	62,978	18,603	‖27,435
Buildings ...	...	5	5,272	1	3,632	6	8,904	2	¶1,750	4	7,154
Elephants ...	...	3	3,500	...	...	3	3,500	...	...	3	3,500
Tools and plants ...	...	3,219	3,140	158	1,224	3,377	4,364	600	2,108	2,777	2,256
Ordnance stores ...	...	...	...	lbs. 100 gunpowder	** ...	lbs. 100	...	...	...	lbs. 100	...
Total ...		8,420	37,427	55,900	69,754	64,320	1,07,181	42,833	66,836	21,487	40,345

	Rs.	a.	p.
*12 Axes sent to Mr. Dansey for valuation work	4	8	0
1 Shoeldari, rotten, and struck off ...	25	0	0
6 Files used up	12	0	0
37 Wood tickets lost	[illegible]	8	0
1 Office pitarah, used up	1	8	0
Depreciation of chauki ... ... **	25	9	0
Ditto of forest hut ...	40	0	0
Ditto of tools	[illegible]	14	0

† Broken and lost.

‡ Loss by depreciation.

§ Ditto.

‖ Rs. 270 of this amount loss by depreciation.

¶ Transferred to the new Ganges Division.

** Value not known at present.

FORM No. 60.—(*Suggested*).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Abstract showing the value of Timber and of Live and Dead-stock for the year 1879-80—(concluded.)

Description of timber and other stock	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
Ganges Division.											
Deodar sleepers	...	...	3,000	4,740	3,000	4,740	3,000	*4,740	...	...	
„ pieces	...	...	1,118	699	1,118	699	1,118	699	...	...	
Ballas, tors and ballis	...	...	10,135	4,709	10,135	4,709	10,135	4,709	...	...	
Sein karis	...	...	23,358	21,735	23,358	21,735	*23,358	21,735	...	...	* 48 karis lost, *vide* remarks in form No. 56.
Total ...	...	...	37,611	31,883	37,611	31,883	37,611	31,883	...	...	
Buildings	6	14,300	2	1,750	8	16,050	...	...	8	16,050	
Tools and plant	2,004	5,462	525	805	2,529	6,267	...	...	2,529	6,267	
Elephants	1	2,000	...	...	1	2,000	...	...	1	2,000	
Gunpowder	lbs 635	725	...	...	635	725	100	190	535	535	
Fuze	ft. 13,025	260	...	...	ft. 13,025	260	...	...	ft. 13,025	260	
Total ...	2,646	22,747	38,138	34,438	40,784	57,185	37,711	32,073	3,073	25,112	
Jhansi Division.											
Ballis	701	41	822	59	1,523	100	1,222	89	301	11	
Bamboos	786	3	3,222	29	4,008	32	2,175	19	1,833	13	
Firewood	mds. 789	114	...	...	789	114	789	114	...	...	
Carts	3	74	...	...	3	74	...	...	3	74	
Bullocks	7	162	...	...	7	162	1	27	6	135	
Sheds	2	16	...	...	2	16	...	...	2	16	
Tools and plant	3	7	...	...	3	7	...	...	3	7	
Total ...	2,291	417	4,044	88	6,335	505	4,187	249	2,148	256	

Lalitpur Division.											
Bamboos... ...	...	2,80,099	1,306	35 574	272	3,15,673	1,578	3,06,510	1,532	9,163	46
Ballis	...	1,849	105	333	49	2,182	154	2,182	154	...	...
Country Carts ...	...	12	219	...	...	12	219	...	...	12	219
Bullocks... ...	...	24	327	2	40	26	367	2	30	24	337
Total	...	2,81,984	1,957	35,909	361	3,17,893	2,318	3,08,694	1,716	9,199	602
SUMMARY.											
Timber including fuel	...	38,162	70,731	1,29,329	1,88,325	1,67,491	2,59,666	1,17,341	1,89,778	50,150	69,878
Bamboos	...	2,80,885	1,309	38,796	301	3,19,681	1,610	3,08,685	1,551	10,996	59
Buildings ...	...	42	*45,278	6	5,790	48	51,061	2	1,815	46	49,253
Tools and plant ...	...	22,434	18,176	2,535	3,030	24,969	21,206	1,363	2,890	23,606	18,316
Elephants ...	...	6	9,500	...	...	6	9,500	...	...	6	9,500
Bullocks... ...	...	31	489	2	40	33	529	3	57	30	472
Country Carts ...	...	15	293	...	...	15	293	...	...	15	293
Ordnance stores ...	...	lbs. 635 gunpowder and fuze.	985	...	...	lbs. 635 and fuze.	985	lbs. 122 ane fuze	190	lbs. 513 and fuze.	795
Total	...	3,42,210	1,46,761	1,70,668	1,98,086	5.12,878	3,44,847	4,27,516	1,96,281	85,362	1,48,566

*Direction Division buildings, value Rs. 10,000 omitted last year.

Difference in value at commencement and close of the year, Rs. 1,805 in favour of the year.

NAINI TAL:
The 30th June, 1880.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

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OUDH CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION,
FOR THE YEAR ENDING 31st MARCH, 1880.

By Captain E. S. Wood, Conservator of Forests, Oudh Circle.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

1. During the year under review I visited all the divisions in my charge.

2. The divisions and sub division, with the officers who held charge of them for the year, or the principal part of it, are given below :—

Charge.	Officer in charge.	Remarks.
Oudh Circle ...	Captain Wood	3 months' privilege leave, September—November, when Mr Greig of Central Circle officiated, Captain Wood doing the same for Mr. Greig on 3 months' privilege leave January—March.
Divisions.		
Bareilly	Mr. Ponsonby	Whole year.
Bhira, Kheri (Sub-divn.)	Ditto	Ditto.
Trans-Sarda, Kheri ...	Mr. Wilmot assisted by ...	Ditto.
	„ Battie	Joined from Bahraich, September.
Bahramghat ...	Babu Kunhya Lal	Whole year.
Bahraich	Mr. Allan assisted by	Joined from Gorakhpur, November.
	„ Pinder	Ditto Panjab, October.
Gonda	„ Rebsch	Ditto Bahraich, November.
Gorakhpur	„ Campbell	Ditto Kheri, November.

3. During the year parganas Pilibhit and Puranpur, in which the forests of the Bareilly division are situated, were formed into a collectorate separate from that of Bareilly; and in order to associate the forests closer with the district, the forest division formerly known as the "Bareilly division," from the 1st of April, 1880, has been styled the "Pilibhit" division.

4. Progress has been made in more intimately connecting the Forest divisions with the districts in which they are situated.* The Trans-Sarda sub-divisions of the Kheri division and the Bahraich division are double charges, owing to their importance and area. Bhira, separated by the Sarda from the other sub-divisions of Kheri, forms a separate charge, and has been administered by Mr. Ponsonby, whose forests in Pilibhit they adjoin; but to make the arrangements perfect another officer is required.

5. The principal events of importance have been the passing of rules in accordance with the Forest Act, and the passing of orders on the reports of the special commission, of which Captain Pitcher and myself were members—*viz.* (1) General orders connected with the privileges of villages adjoining the Oudh forests generally; (2) overruling the claims of the Rája of Khairigarh; (3) compounding with the Maháraja of Balrampur for arrears of grazing dues and giving him a contract of them for a fixed period; (4) bringing the forests that were formerly grants in Oudh under the same rules as to privileges as other forests in Oudh, the Department not being liable to pay cesses, but liable to grant the three-mile privileges.

* *Note.*—Orders issued in G. O. No. 741 of 14th July, 1880.

II.—RESERVED FORESTS.

1.—AREA AND BOUNDARIES.

6. **OUDH CIRCLE.**—The areas of reserved forests are taken the same as last year, *viz.*, 1,072 square miles, with the addition of 7 square miles obtained by purchase and received from district authorities.

Division.	Area on 1st April, 1879.	Area added during the year.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.
Bareilly	136	...	136
Bhira Sub-division, Kheri ...	160	4	164
Trans-Sarda Sub-division, Kheri ...	263	...	263
Bahraich	257	...	257
Gonda	140	3	143
Gorakhpur	115	...	115
Total	1,071	7	1,078

7. **Bareilly Division.**—I have kept the area of the forests the same as last year, though it is probable that the area will be found to be more than that given, but as there are several grants or portions of them which will probably be handed over to the Forest Department, I think it will be time enough to give the total corrected area when possession is obtained and no more additions have to be made.

Bhira Sub-division, Kheri—Two small plots of ground which remained to grantees of grants formerly handed over to the Forest Department, and which it was considered advisable in the interests of conservancy to get into our own hands, were purchased, *viz.*, 180 acres in grant Madha and 45 acres in grant Bhadpora, for Rs. 1,125, being at the rate of Rs. 5 per acre; grant Babuapur, consisting of 2,435 acres, and which separated the Kaptowra forest from the Palhanapur forest, but the acquisition of which makes the blocks complete, having been resumed by Government from the grantee, was made over to the Forest Department.

Bahraich Division.—Mr. Nicholson, the officer deputed by Government to carry out the demarcation of the Bahraich forests, commenced work on the 31st December, 1879, and concluded on the 31st March; 1880, he started work on the Koriali, and nearly completed all the villages to the Chota Sarju. Some alterations of the positions of boundary pillars and the lines between these have had to be made, but no actual alteration of area has taken place in the calculated area, which is that given by the revenue survey maps; though in laying the boundaries down on the ground, up to the present it has been found that the Forest Department has gained instead of lost by the new demarcation.

Gonda Division.—Two grants, Jaipur and Shimbhunagar, adjoining the Ramgarh forests in pargana Nawábganj, consisting of 954 acres and 795 acres respectively, have been made over to the Forest Department. They consist principally of sál poles which have been repeatedly cut over, and are of much the same quality as the Ramgarh forest was some ten years ago. The advantages of conservancy are shown in the superiority of the Ramgarh forest over the two new additions.

2.—PROTECTION AND IMPROVEMENTS.

OUDH CIRCLE.

A.VII.—Communications and Buildings.

	Rs	a.	p.
a.—Roads and bridges	13,853	8	9
b.—Buildings	16,583	0	5
c.—Other works	2,171	6	8
Total	32,607	15	10

(*a.*) Roads and Bridges.

8. I shall take up the works of protection and improvement in the order they are given in the Budget. About 90 miles of new roads were taken in hand and

mostly completed; 403 miles of old roads and 103 of fire-paths have been kept up, repaired, and improved; 20 new bridges have been made and replaced, the others kept up and repaired, at a cost of Rs. 13,854; some of the expenditure of roads completed last year coming in this year's expenditure.

9. **Bareilly Division.**—24 miles were taken in hand and 2 ½ miles old roads repaired.

Bhira Sub-division, Kheri.—28 ⅔ miles of new roads were taken in hand, and 28 ⅔ miles of old roads repaired.

Trans-Sarda, Kheri.—19 miles of new roads were made, 176 of old roads repaired; more attention is now being paid to the improvement of existing roads. Three bridges burnt last year were replaced, 2 new bridges made, and the usual bridge over the Soheli at Dudua built and kept up.

Bahramghat Depot.—350 yards of road in the Depôt were remetalled at a cost of Rs. 130.

Bahraich Division.—5 new roads, about 15 miles, both for traffic and fire conservancy, were made; 5 miles of 15 feet road broadened to 20 feet to accomodate the increased traffic; 1 5 miles of old roads and 103 miles of fire-paths repaired. The heavy rains of 1879 did great damage to bridges, and 12 had to be replaced.

Gonda Division.—34 miles of old roads were repaired.

Gorakhpur Division.—The road from Chowk towards Daibar, opening up the forests, has been completed.

(*b.*) BUILDINGS.

10. **OUDH CIRCLE.**—The usual repairs have been made. Progress is being made in all divisions, (except Gonda, which will be taken in hand this year) in making rest-houses in the centre of existing or proposed fire conservancy operations; a house and ground was purchased at Bahramghat adjoining our premises; and several timber-sheds built for the protection of sawn timber at Bahramghat. The total cost has been Rs. 16,583.

11. **Bareilly Division.**—A ranger's house of sun-burnt bricks was taken in hand at Mahofe (fire conservancy head-quarters); since completed in 1880-81.

Bhira Sub division, Kheri.—About a lac of burnt bricks and 25,000 unburnt were prepared, and foundations of a ranger's house and 1st class rest-house at Madha Deh (head-quarters of fire conservancy) laid, besides which lime was prepared and arrangements made for timber.

Trans-Sarda, Kheri.—The usual repairs have been made. The Bilrain 1st class rest-house, which reflects great credit upon Mr. Wilmot, was completed; materials collected for a 2nd class rest-house at Sanaripur, on the east of the present Dudua fire conservancy block, and in the centre of the proposed block (since run up 10 feet high); and a small house 12′ × 10′ was built for the Registrar at Dudua, of burnt bricks with tiled roof, being to all intents and purposes fire-proof.

Bahramghat Depot.—5 timber-sheds and a small one for the accommodation of workpeople were made and the house repaired. The house and machine-shed of the late N. W. Contract Company, Limited, with land adjoining, were purchased for Rs. 5,000.

Bahraich Division.—The Sujauli rest-house was completed, the Motipur nearly so; the old rest-house at the latter place was repaired and is available as an office and tool-house. The usual repairs to other bungalows were made and materials collected for two new single-storied rest-houses in the Chakia forest and at Sohelwa (Section VIII).

Gonda Division.—Only small repairs were done.

Gorakhpur Division.—The Chowk bungalow was enlarged, made more commodious and reroofed; two small rooms were also made at the Ramgarh bungalow, and preparations were made for a 3rd class rest-house at Madholia.

(*c.*) OTHER WORKS.

12. **OUDH CIRCLE.**—Besides camping-grounds at various places being cleared and the Soheli cleared of snags, about 6 new wells have been made, 9 old wells repaired, 7 sunk deeper, and 40 cleared out. The cost has been Rs. 2,171.

13. **Bareilly Division.**—Six masonry wells found within forest limits were cleared and repaired.

Bhira Sub-division, Kheri.—Two old wells found in forest limits were cleared and repaired. The Mahofe tank dug 5 feet deep last year had 2 feet of water in it during the hottest weather, so that until a very dry season comes it cannot be deepened.

Trans-Sarda, Kheri.—Two wells were completed, 4 new wells were taken in hand, and 5 wells opened out last year were sunk 20 feet further down, and 25 wells were cleared out. The Soheli was cleared, as usual, at a cost of Rs. 430.

Bahramghat Depot.—An old well that had fallen in was cleared out and repaired for Rs. 50.

Bahraich Division.—Three wells commenced last year have been completed, cost Rs. 487 Rs. 443 and Rs. 562 respectively; depth 50 feet to 60 feet to water. Two more have been commenced in the Nishangara fire conservancy block; a well in the Chakia forest at the site of the new rest-house was commenced. Two wells in Bhinga that were dried up are being replaced; the other wells in the division were cleared out.

Gonda Division.—Two wells were cleared out.

Gorakhpur Division.—The Sakhui well was cleared out and site selected for a new well at Daibar.

A.VIII.—DEMARCATION, IMPROVEMENT, AND EXTENSION OF FORESTS.

		Rs.	a.	p.
a.	(*d*) Demarcation	3,895	8	10
b.	(*e*) Compensation	1,125	0	0
c.	(*f*) Survey	93	4	3
d.	(*g*) Plantation	4	5	0
e.	(*h*) Protection from fire	5,326	7	11
f.	(*i*) Other works	2,963	7	10
		13,408	1	10

(*d.*) DEMARCATION.

14. **OUDH CIRCLE.**—About 101 miles ditching were done, of which 10 were old boundaries replaced—and 46½ miles of daghbel repaired, at a cost of about Rs. 2,600—that is Rs. 3,896, less Rs. 1,300, the money spent last year in Bareilly, besides a number of boundary pillars repaired.

15. **Bareilly Division.**—The daghbeling was completed last year of the portions made over to the Forest Department, though the expenditure falls in this; 11⅝ miles of ditching were taken in hand.

Bhira Sub-division, Kheri.—4 miles 1½ furlongs of ditching were made outside the fire conservancy block.

Trans-Sarda, Kheri.—4 miles of ditching were completed.

Bahraich Division.—71 miles of new 3 feet ditching have been completed, and 10 miles old replaced. Great credit is due to Mr. Allan and Ranger Hussain Shah for the way the work was kept up to the demarcating parties; the work was done in three months at Rs. 25 a mile.

Gonda Division.—46½ miles of daghbel have been repaired; cost Rs. 138.

Gorakhpur Division.—Boundary pillars were repaired; cost Rs. 168.

(*e*.) COMPENSATION FOR LAND AND RIGHTS.

16. **OUDH CIRCLE.**—The progress is shown under divisions, Rs. 1,125.

17. **Bhira Sub-division, Kheri.**—225 acres were purchased, as mentioned in para. 7, for Rs. 1,125, at Rs. 5 per acre.

Bahramghat Division.—About 9¼ standard *bighas* of land were purchased along with the buildings mentioned in para. 11 under sub-head "Buildings," and have been charged under that sub-head.

(*f*) SURVEYS AND WORKING PLANS.

18. **OUDH CIRCLE.** – Regarding para. 25 of my report for 1878-79, I received a letter from the Inspector-General of Forests, * saying that the letters referred to had not been received. On the 2nd of April, 1880, in my No. 5 (post registered), I furnished him with copies of the correspondence, and also pointed out that it was hardly credible that a consignment of timber specimens forwarded by the Railway Companies and three official letters, each having reference to the other, could have miscarried, particularly as I received none of the letters back from the Dead Letter Office. To this letter I have received no reply. I have also sent two more specimens of known age at the end of May, 1880, and 23rd June, 1880, with letter No. 69 of 23rd June, 1880, to which letter there has hardly been time for reply, and it is possible that the Inspector-General is waiting to compare all the specimens before answering the former correspondence. I have also pointed out to the Inspector-General of Forests that I think the fact of the receipt of the consignment of specimens and letters having reference to them must have been overlooked, as the data given in the letters referred to as lost have been utilized in a paper in the *Indian Forester* for April, 1879, the particulars of which could only have been obtained from the office of the Inspector-General of Forests.

*No 350 of 13th December, 1879.

Without having true data of the growth of sál, it is but of little use drawing up even preliminary working plans. I have, however, ordered the trees in several quarter acre blocks to be counted, their position on the ground noted, and their girths measured; the detailed instructions are given in appendix No. 1 of this report.

In the trans-Sarda sub-divisions of Kheri a number of 2nd class trees have been also marked and measured. The principle is to measure the trees periodically at a fixed place, say 5 feet from the ground; thin lines have been painted on the trees with white zinc paint, and the same line being measured over at different periods will give the periodical increase of girth, from which the periodical increase of radius can be correctly calculated.

This practical plan I obtained from a paper written by Sir R. Christison, *Bart*, Hon. V. Pt., R. S E., &c, kindly given to me by his son, Dr. Christison, Surgeon-General of those Provinces. It was not until after I had issued my instructions that I saw a somewhat similar method was recommended by the Inspector-General in his "Suggestions for the working of the forests of the School Circle," *viz* to drive a nail into the tree at a fixed height from the ground and to measure the girth at six inches above and six inches below the nail; but as this allows a considerable deviation from the horizontal plane and slightly different measures every period, I think the method of having a fixed painted line is the better to obtain accurate results from in a short period. I had thought over certain methods, one of having a fixed zone outside the trees to be experimented on, and from this measuring the annual growth towards it, but in this plan there were several practical difficulties.

The great object is to ascertain the time it will take a tree with a girth of 4½ feet to attain to a girth of 6 feet, the minimum size we fell, or say a tree of 9 inches radius into a tree of 1 foot radius. If the yearly growth is ⅛th of an inch radius, as I believe it to be, the increase of girth of a tree with a 9 inch radius should be over 1½ inch, whereas if it is $\frac{1}{10}$th of an inch, as assumed by the Inspector-General of Forests, the increase

should be a little over ⅝ths of an inch.* We shall know roughly in another year, but to make certain the measurements of several years will have to be taken. The difference of 4 years will be the difference between 5 inches and 2½ inches, or 2½ inches: so that after 4 years it will be ascertained for a certainty which assumption of the growth of sál is correct. I trust it will be seen that I have done my best regarding the matter; the first specimens were despatched in December, 1877.

19. The only working plans for sál forests that I know of besides that of Oudh are the "working plan of the Buxa plains forest in Bengal," described in the Bengal Report for 1874-75, in which, with a smaller acreage than that of the trans-Sarda sub-divisions of Kheri, and with a less number of large trees per acre and a less number of trees to replace them, a larger amount of timber than is allowed in Oudh is allowed to be felled. This I fully entered into in my letter to Government regarding the curtailment of fellings in Oudh; and the "Suggestions for the working of the forests of the School Circle" by the Inspector-General of Forests, 1878-79, but as in the latter the stock of timber on the ground has not been stated, I have not been able to add to my knowledge on the subject from its perusal. The cost of operations has been Rs. 93-4-3.

(g).—PLANTATIONS.

20. **OUDH CIRCLE.**—The plantations in the Oudh Circle are only experimental, except in Gorakhpur; the total at the commencement of the year is given as 309 acres, and 137 acres were added, making in all 446 acres; but this is subject to revision. The principal plantation is at Ramgarh, where sissu is being planted on land that was cleared of of sál, so that originally the work came under "reboisement," and not under "artificial plantations." This has been carried on up to the present, and error has been caused by the same land having been planted twice over or oftener. This will cause a large reduction in area; the actual area will be measured up this year and the correct total brought forward next year.

The expenditure comes under the Rs. 2,152 shown in Gorakhpur under "Other Works, A. VIII." The cost of experimental plantations in Kheri was Rs. 4-5-0, and of plantations in Gorakhpur, Rs. 1,190-11-10, making a total of Rs. 1,195-0-10.

21. **Trans-Sarda Sub-division, Kheri.**—Some sissu was sown in semi-cylindrical tiles set up right and adjoining so as to form a sort of pot; but the soil does not seem so suitable as that of Gorakhpur, the seedlings not doing so well. Mr. Wilmot tried planting out in February, 1880, at a distance of 5′ × 5′ six thousand seedlings sown 9 months before, in a strip of ground in the lower sissu closed block near Dudua, where the grass had been cleared; the seedlings were doing well when they were all killed by deer, pigs and cattle, which strayed into the block. Mr. Wilmot took advantage of this portion of land having been flooded by the Soheli, and there was a rich damp silt deposit there. Arrangements will be made to fence before planting next working season. The experimental bamboos near Dudua being overshaded by the deciduous tree jungle in which they were planted, I have had the deciduous trees killed, and I hope the bamboos will benefit from the treatment.

Bahraich Division.—A small plantation of sissu and Khair has been made near Nishangara, but the result will be shown in 1880-81.†

Gorakhpur Division.—Good progress has been made. The sissu cuttings have not been successful, the plants when growing becoming more like bushes than trees, and have been mostly replaced by seedlings. The sissu seedlings sown in March and April, 1879, were from 3 to 6 feet high when planted out in February—March, 1880. The ones in pots have been successful so far, retaining most of their fibrous roots for

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NOTE.—9″ radius, 9 × 2 × 3·1416 = 56·5488
9″.1 „ 9·1 × 2 × 3·1416 = 57·1771
9″.2 „ 9·2 × 2 × 3·1416 = 57·8054

57·1771	57·8054
56·5488	56·5488
·6293	1·2566

½″ = ·625

Some sissu sown in March, 1880, was 3 feet high on the 17th June, and some khair higher.

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transplanting, whereas the ones dug up from the beds lost most of theirs; but owing to the holes at the bottom of the pots not having been stopped with broken tiles, the tap-roots generally made their way through the holes into the soil below and had to be broken off. I am now trying the sowing in beds 2 feet deep, the tap-root being stopped by a masonry flooring and the side roots by the sets of semi-cylindrical tiles. These seedlings, sown in March-April, 1880, are doing well; some are being transplanted in the present rainy season and some will be transplanted in February-March next year, when the frosts are over and the plants are at rest. During the year the remainder of the first 100 acres block, *viz.*, 21 acres, was filled up with seedlings* by Mr. Allan. Mr. Campbell completed a new 100-acre block and commenced 15 acres of another one.

The usual method of watering the transplants has been to water the surface with water from *gharas*. Even though the surface is protected by a coating of grass, the severe heat soon dries up the moisture. The burying of *gharas* full of water alongside the plants may do very well for small plants, but does not, I consider, do for deep-rooted plants; I am therefore trying the system of watering the tap-roots by burying four semi-cylindrical tiles alongside the transplant, forming a hole 2 feet deep and applying the water to the bottom of the hole; this seems successful, the plants getting the full benefit of the water; certain improvements in the system are being worked out, but the principle is to apply the water as low down as possible, to make it ascend through the earth above and benefit the fibrous roots as well as the tap-root, to protect the moist earth as much as possible from the rays of the sun and the drying winds, and making the moisture go through the plants instead of directly into the air.

An experiment has been made in planting cuttings of bamboo in the same way as sugarcane, the result of which will be communicated hereafter. Sál has not seeded this year except in rare instances, but bamboo has seeded freely, and advantage has been taken to collect a few maunds of seed. It may be worthy of note that I have noticed the bamboo grass growing at Naini Tal is seeding this year also, a thing I have not noticed before.

The teak sown by Mr. Amery at Rámgarh, which appeared almost destroyed last year, has made vigorous and straight shoots of about 15 feet during the year, and I trust are beyond the reach of frost. The damp season of 1879 seems to have been favourable to them as also to some of the tun trees.

Mr. Campbell deserves great credit for the way that he has carried on the system of planting which was handed over to him by Mr. Allan.

The few acres of sissu made by Messrs. Amery and Grant are doing well and have been thinned, it is only to be regretted that the plantations were not on a larger scale.

I had the advantage in February of going over with Mr. Peppé of Basti the sissu plantations he has been making for many years past; from him I obtained the age of each plantation. Mr. Campbell made the measurements, and I hope soon to work out the data which will enable us to form some idea of what our plantations on similar soils will be at given periods in the future.

(*h*)—Protection from fire.

22. **OUDH CIRCLE.**—The table below shows the area protected and preserved:—

	Area attempted	Protected area.	Cost.		
	Acres.	Acres.	Rs.	a.	p.
Bareilly ...	17,017	16,967	560	12	8
Bhira Sub-division, Kheri	10,637	8,205	543	10	3
Trans-Sarda, Kheri ...	22,080	21,580	3,090	8	11
Bahraich	22,115	21,704	995	0	0
Gorakhpur	73,540	72,636	377	5	5
Total	1,45,389	1,41,092	5,567	5	3

* Note.—Space 15′ × 15′.

The total cost was Rs. 5,326-7-11 during the *financial* year. The table above show for the *fire conservancy year*, giving a rate of Rs. 25 per square mile preserved and failures at the rate of less than three per cent. The area actually preserved was 224·5 miles out of 1,079, or nearly 21 per cent. for the whole circle, Oudh proper only showing about 8 per cent.; but a larger area not shown in the above return was preserved from fire. The year has been remarkable for the greenness of the grass even when not burnt, and for the rapidity of the growth after being burnt, owing presumably to the heavy rains of the last year and the subsequent moisture. This rendered the burning fire difficult and expensive and was the cause of the fire in the Bhira sub-division, complete isolation from the outside not having been obtained: on the other hand the fact of the grass being moister than usual was a gain in the interests of fire conservancy. Showers, which lessened danger from fire, fell about the 14th June, 1880, and by the 23rd of the same month all danger from fire was over, heavy rain having fallen.

23. **Bareilly Division.**—A block in the north capable of extension was taken in hand for the first time.

Bhira Sub-division.—About 3½ square miles were burnt during the hot winds, which took place on the 13th of April, 1880; the fire came in from forests adjoining.

Trans-Sarda, Kheri.—A small block was burnt at the same time as in Bhira; the fire was from inside, owing to carters; it was fortunately surrounded by fire-paths. To prevent the whole block going as last year, I had the broad lines which divided the block into four smaller ones made wider. The usual method has been to cut the grass on the driving road in the middle of the 100-feet clearing, and then cut the grass in strips at the edges of the 100-feet clearing and burn right and left of the road; in addition to this I had a 10-feet road made in the tree forest, 100 feet parallel to the driving road, the grass cut and the grass between the two roads burnt, so that the space cleared was about $50+7\frac{1}{2}+100+10=167\frac{1}{2}$ feet: this of course cost money. In the lower closed block I also had the strip of grass land north of the Dudua-Khairigarh line burnt, so as to isolate the sál from the sissu forests. Both grass and tree-bearing land adjoining the Dudua block were carefully burnt, isolating the block from without. The fire last year of course did great damage, but the forest has recovered itself in a wonderful way.

Bahraich Division.—Besides the regular areas for which a regular fire conservancy establishment is kept up, most of section II., west of Nishangara, was saved, and also the whole of the Bhinga forest. Arrangements for protection are being made in the Chakia forest. Notwithstanding the protection from fire of the Charda forests, the grazing does much damage, and owing to this and the taking out of most of the unreserved trees by the privileged villagers, the forest is rapidly deteriorating. I have arranged for closing against grazing a small block in Charda. There were only small fires in the Nishangara home block owing to villagers from Nipal coming into the block with native matchlocks; but I have written to Mr. Girdlestone on the subject, and I believe the practice will soon be stopped.

Gonda Division.—Though there is no regular fire conservancy, almost the whole of the division has been saved from fire.

Gorakhpur division.—The percentage of failure was very small: nearly the whole division was saved.

24. With reference to the remarks of the Government of India on the progress reports, North-Western Provinces and Oudh, for 1878-79, regarding fire conservancy and contrasting our fire conservancy with that in other provinces, I would bring the following to notice.

Fire conservancy was commenced in the Central Provinces in 1864, and in the North-Western Provinces and Oudh in 1872. In the Central Provinces, 7 or 8 years after fire conservancy had been commenced, there were 92,479 acres protected, and after 9 years 144,542; in the North-Western Provinces and Oudh, 7 years after fire conservancy was started, 301,291 acres were protected.

The following list shows the area of the forests, the area preserved, and the percentage of acres preserved :—

	Area.	Protected.	Protected.	Percentage.	
	Square miles.	Square miles.	Acres.		
Bengal	10,455	167	106,754	1½	
N.-W. P and Oudh ...	3,360	471	301,291	14	
Central Provinces ...	19,604	1,080	691,262	5½	Not including 222 unreserved.
British Burmah ...	1,237	112	7[illegible],322	9	
Coorg	295	202	129,478	68	
Ajmere	100	70	44,659	70	
Assam	5,585	52	38,259	1	Not including forest without revenue limits.
Mysore	422	164	105,013	38	
Berar	4,157	867	555,037	20¾	

In Coorg the forests are not finally demarcated. In Ajmere it would appear from para. 5 of Government of India order on Ajmere report for 1878-79, that there were altogether 588,647 acres of barren and fallow land in the district that may be brought under forest operations; as that is probably grazing ground, the area protected is brought down to 7½ per cent. of grazing forest area. In Burmah, besides the reserved forests, it is believed that Government owns 15 kinds of reserved trees in forests half the extent of the province. In Mysore it is not known how much forest land there is besides forests actually reserved. In the paragraph under notice the Government admits that the obstacle to success was less in the Central Provinces than in the North-Western Provinces and Oudh; but I believe from what I know of the forests in the three Circles that the obstacles to success are very much greater in them than in the Central Provinces, the forests protected in the Central Provinces being more favorably situated and with less inflammable grass in them. Again, it is believed that in the Central Provinces the 1st class reserved forests are really reserved, whereas in Oudh grazing has to be given to a large number of cattle, and to prevent hardship on the people we have to be very careful in closing portions gradually and not in too large masses. *In reality, in Oudh our real or first class reserves are only such portions as are protected both from fire and grazing*, whereas in the Central Provinces there are 2nd class reserved forests, some 16,882 square miles in extent (last year's grazing dues Rs. 3,17,222) from which grazing can be had, and I believe there is much other grazing ground beyond the forests,* whereas in Oudh there is little grazing ground except in Government forests.† I am endeavouring to get as large an area protected from fire as is compatible with the grazing interests of the people.

In Burmah the area arranged for was 32,970 acres, say 515 square miles, and cost Rs. 968-9-0, or Rs. 18-13-0 per square mile. In Berar the area arranged for was 600,497 acres, or 938 square miles, at a cost of Rs. 2,973, or Rs. 3-3-0 feet per square mile. The difference in cost of labor has to be considered, and very likely the position of the reserves and the grass in the forests. What I want to bring to notice is that it is not only acres and rupees that have to be considered in judging of results. I know for certain that there are many parts of the forests under my charge which I could, if set fire to, put out with a few men; there are others where, with a hot wind storm blowing, it is almost beyond human power to extinguish the fire, or confine it with 100, 200, 300, or even 600 feet clearings.

* NOTE.—The Inspector-General of Forests, in para. 77 of his review of all Forests, 1878-79, alluding to grass, fruit, bamboos, and other produce, says: "the Government forests, however, are not the sole sources of supply."

† In Oudh proper our normal grazing dues amount to Rs 30,000, at 3 annas per head=160,000 head for 818 square miles, giving 195 head per square mile in our so-called reserved forests. I believe the grazing rate per head of cattle in the Central Provinces is 2 annas, thus giving 2,537,776 head for 17,104 square miles of 2nd class reserved forests, or 148 head per square mile.

(i) OTHER WORKS OF IMPORTANCE.

25. **OUDH CIRCLE.**—The figures below give the prosecutions and convictions for breach of forest rules :—

	Prosecutions.		Convictions.	
	Number of cases.	Number of persons.	Number of cases.	Number of persons.
Bareilly	2	26	2	26
Bhira Sub-division, Kheri ...	2	13	2	13
Trans-Sarda, Kheri	6	7	3	4
Bahramghat	1	1	1	1
Gonda	61	94	45	71
Gorakhpur	13	15	13	15
Ditto	7	28	4	7
Oudh Circle	92	184	70	137

Rs. 1,863 were spent in the circle* on works other than plantations or "reboisement," alluded to in para. 20.

26. **Trans-Sarda Sub-division, Kheri.**—The naturally sown sissu was much damaged by last year's fire at the edges, but was all right inside the block ; the trees have been slightly thinned as they were crowding each other too much. Scattered trees have suffered severely; this year, however, many have recovered themselves a good deal : the ones burnt quite over at the top are shooting up from the bottom, but it is a great question whether they will ever make good trees. Creepers were cut from Dudua to the east as far as the sub-divisional line ; they were few and far between ; the cost was Rs. 128. In the improvement fellings near Dudua the trees are rapidly killing out the long grass ; as there is plenty of sál, it will hardly be necessary to thin out the miscellaneous trees which enrich the soil and keep down the grass, except where they are getting ahead of the sál seedlings.

Bahraich Division.—The small enclosed patches are getting on, but the seedlings are not so numerous as if the earth were loose, I had made arrangements to dig up large areas so as to give cover to the seed but sál not flowering during the month of April, I have put it off till there is a prospect of a good seed year. The hedge round the closed block at Bhinga, which wants constant repairs, is being replaced by a broad ditch ; the inside bank is being planted, with thorns of the most tangled and prickly kinds. Mr. Wilmot's late experiment is doing well, having paid in interest more than the money expended ; it is one of the many ways of increasing revenue which can be carried out when a fuller establishment is granted. 880 trees are bearing lac ; the outturn was sold for Rs. 150, the original cost in 1877-78 was Rs. 50.

Gorahkpur.—Above 4,000 acres were cleared of creepers in Sonari, Nagwa, West Lehra, Dudhai, and Bhilrampur forests. Block No. 2 of Ramghar was cleared of the parasites alluded to in a former report. Thinnings are treated of in para. 28.

	Rs.	a.	p.
	*2,963	7	10
Deduct	1,190	11	0
	1,862	12	10

3.—YIELD AND WORKING.

27. The following tables are given as ordered :—

[Abstract of form No. 53.]

Statement of timber felled during the year.

Year.	On hand.		Felled.		Total.		Disposed of.		Closing balance.	
	No.	C. ft	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.
1878-79 ...	13,229	3,34,150	34,443	2,65,871	47,672	6,00,021	43,165	2,59,953	7,443	3,40,068
1879-80 ...	74,433	3,40,068	59,016	1,63,534	66,459	5,03,602	66,159	4,97,602	300	6,000

The different classes and species are detailed in the abstract of form No. 53 given in the appendix in the manner approved of by Government. Of the 59,016 trees 34,449 were sál (only 2,412 1st class), arseyna, mostly thinnings, and 5,616 miscellaneous, besides small thinnings not counted ; miscellaneous trees taken away by privileged villagers are not given.

28. **Trans-Sarda, Kheri.**—1,973 trees were felled out of the 2,000, we are limited to, no more being required for the Patna contract ; the trees were cut in the block west of the Suthiana line and south of No. 1 Soheli line : the outturn was about 2,660 logs and pieces and 500 pieces too small to repay carting. The trees were rather inferior, the best trees having been selected between 1862 and 1870. There will be no carters' outstandings. Some logs are lying in the forests near Khairigarh from former fellings, but it will pay better to let them be removed by purchasers.

Bahraich Division.—61 sál trees, line fellings, were removed by purchasers.

Gorakhpur Division.—The larger number of small trees was removed by purchasers. The ones in Ramgarh* were cut by departmental agency in thinnings ; in other forests they were cut as well as removed by purchasers.

29.—**OUDH CIRCLE.**—

[Abstract of form No. 54.]

Logs, sleepers, scantlings cut and exported.

Year.	On hand.		Felled.		Disposed of.		Closing balance.	
	No.	C.ft.	No.	C.ft.	No.	C.ft.	No.	C.ft.
1878-79 ...	2,93,516	7,55,626	1,75,549	8,24,888	1,72,963	8,34,427	2,96,102	7,46,087
1879-80 ...	2,96,102	7,46,087	1,50,994	6,41,878	1,97,190	7,71,247	2,49,906	6,16,718

30. **Trans Sarda Sub-division Kheri.**—There were 3,656 logs sent from Kheri to Bahramghat, of which 3,259 had reached at the end of the financial year.

Bahramghat Division.—2,773 sál logs and 291 asna were converted into scantlings ; 588 sál and 214 asna were sold in logs to purchasers.

The table below gives a comparative statement of last year's and this year's work at the Bahramghat saw mill :—

Year.	Value of work done at old rates.			Expenditure.			Surplus.		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
1878-79	13,661	14	6	10,367	2	11	3,214·15	8	
1879-80	13,997	5	9	10,129	9	11	3,872	11	10
Giving a superior surplus in favor of this year of							577	12	2

* Note Ramghar—

Block No. 7	405 acres.		
	Rs.	a.	p.
Cost	734	0	0
Receipts	6,126	0	0
Surplus ...	5,392	0	0

The cost for sawing per 100 cubic feet was Rs. 13½ as compared with Rs. 16¾ of last year and over Rs. 20 of the year before; but I think the column "value of work done" gives the best test. At the commencement of the year the balance of indents in hand was 759·53 cubic feet. New indents amounted to 27,043·08 cubic feet, 21,846·89 were complied with, leaving 5,955·72 at the close of the year, of which 1,513 were supplied in April and May, 1880. Of the 150,000 cubic feet, Patna contract, more than the quantity has been supplied; but as we have adopted the opium factory measurements, for which we get paid extra, we have in reality to supply more than the quantity calculated for. Of this there were 16,672 cubic feet remaining, but logs to the amount of 10,447 were in transit to Patna between 1st and 31st March, 1880. Auction sales realized about Rs. 55,723.

Babu Kanhiya Lal, the officer in charge, has performed his duties with great care and ability, and he well deserves promotion to the grade of Sub-Assistant Conservator.

31. **OUDH CIRCLE.**—

[Abstract of Forms 55 and 56.]

Timber accounts.

Description of timber, &c.	Balance in hand.	Brought to Depôt.	Total.	Removed by purchasers.	Lost or used by department.	Closing balance.
1878-79.						
Timber	8,375	5,752	14,127	814	4,888	8,425
Golas and ballis ...	16,539	1,308	17,847	9,285	29	8,532
Canoes	523	...	523	18	...	505
Scantlings ...	79,391·99	92,270	1,71,661·99	1,04,690	19,008·99	47,963 c. ft.
Charcoal	4,111	3,125¼	7,236¼	3,195 9/16	1,138¾	2,902½ mds.
Fuel	25,980	3,612	29,598	12,893	5,001 1/16	11,703½
Total No. ...	25,437	7,060	32,497	10,118	4,917	17,462
„ C.ft. ...	79,391·99	92,270	1,71,661·99	1,04,690	19,008·99	47,963
„ Mds. ...	30,091	6,743¼	36,834¼	16,087 9/16	6,140½	14,606 9/16
1879-80.						
Timber	8,125	7,237	15,662	1,302	7,323	7,037
Golas and ballis ...	8,532	2,419	10,951	6,025	809	4,117
Canoes and boats ...	505	648	1,153	21	86	1,046
Scantlings ...	47,963	1,69,530·87	2,17,493·87	1,53,151	25,744·87	38,598 c. ft.
Charcoal	2,902½	3,831½	6,733¾	4,614½	1,522½	597 mds.
Fuel	11,703½	28,840	40,543½	12,795	15,712	12,036½
Total No. ...	17,462	10,304	27,766	7,348	8,218	12,200
„ C.ft. ...	47,963	1,69,530·87	2,17,493·87	1,53,151	25,744·87	38,598 c. ft.
„ Mds. ...	14,606 9/16	32,671½	47,277 1/16	17,409½	17,234½	

32. **Trans-Sarda Sub-division, Kheri.**—Fellings less than usual; stocks reduced.

Bahramghat.—Sales of timber more than usual; great demand for charcoal and fuel: could have sold more if we have had it at sale depôt.

33. **OUDH CIRCLE.**—The value of timber, &c., sold to public departments was Rs. 1,24,291. I give below the value of timber and live and dead stock. I have given no numbers for the timber, as the timber is in logs of about 50 or 60 cubic feet each, scantlings of all sizes in cubic feet, bullas and fuel and charcoal in maunds; besides, though one could enter the stock value of receipts, the actual sales would not give the correct total, value at the close of the year. From this table it will be seen that the value of timber stock deteriorated Rs. 42,940, and live and dead stock appreciated Rs. 14,205. I only gave the rough valuation last year. This table has been most carefully prepared, yet only

a rough idea of the increased value of capital, obtained by making new roads and wells, &c., can be obtained from such valuation :—

Abstract of Form No. 60, showing value of Timber and of Live and Dead Stock, 1879-80.

Year.	Description.	On hand at commencement of the year.		Received during the year.		Sold or otherwise disposed of during the year.		On hand at close of the year.		Remarks.
		No.	Value.	No.	Value.	No.	Value.	No	Value.	
			Rs.		Rs.		Rs.		Rs.	
1879-80...	1. Surveying and other instruments.	38	980	7	10	...	...	45	990	
	2. Machinery ...	24	27,000	...	...	...	...	24	27,000	
	3. Tools ...	3,823	3,996	589	155	310	159	4102	3,992	
	4. Office furniture ...	591	1,227	99	315	11	14	679	2,228	
	5. Tents and equipages.	47	1,474	14	640	6	35	55	2,079	
	6 Building-materials, &c.	196	1,448	4	32	6	369	194	1,111	
	7. Miscellaneous ...	398	2,015	155	1,469	30	1,149	523	2,335	
	Boats, canoes, and carts.	1,151	68,940	38	5,320	124	7,720	1065	61,540	
	Buildings ...	18	36,500	3	9 000	...	...	21	45,500	
	Elephants ...	5	13,300	3	6,900	...	...	8	20,200	
	Bullocks ...	12	310	...	...	4	110	8	200	
	Buffaloes ...	32	320	2	20	10	100	24	240	
	Total ...	6,335	1,5[illegible],210	914	23,861	501	9,656	6,748	1,67,415	Increase of value Rs. 14,205.
	Abstract of supplement to form 60.									
	Timber, including fuel,	...	1,90,560	...	...	...	...	...	1,47,600	Decrease in value Rs. 42,940. For details see Form 60 of this and last year's report.

4.—FINANCIAL RESULTS.

34. **OUDH CIRCLE.**—The financial results of the year as compared with those of the previous year are as follows:—

Receipts.		Expenditure.		Surplus.	
1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
3,06,570	3,84,933	2,39,602	2,45,547	66,968	1,39,386

The balance of Rs. 72,408. the surplus of present over past year, is owing to arrears of revenue for timber being paid up, arrears of Gonda and Bahraich grazing dues, Rs. 10,000, and better sales generally, as shown in detailed statement below (para. 36).

35. **OUDH CIRCLE.**—The results are given under the different heads :—

Year.	I.	II.	III.	IV.	V.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1878-79	1,78,497	1,24,678	1,718	...	1,677	3,06,570
1879-80	2,42,410	1,37,521	2,727	...	2,265	3,84,923
Total ...	+63,913	+12,843	+1,009	...	+588	+78,353

The expenditure being Rs. 5,945 more than last year reduces the net surplus in favour of the year to Rs. 72,408. A great part of the increase in "II. *e.*", "Other minor produce," is due to the opening out of catechu manufacture in Trans-Sarda, Bahraich and Gonda. Trans-Sarda, the size of khair trees to be felled was fixed at over 3′ girth at breast height.

36. **OUDH CIRCLE.**—The divisional receipts and expenditure are herewith given :—

	Receipts.		Increase or decrease in of present year.	*Expenditure.*		Increase or decrease during the year.
	1878-79.	1879-80.		1878-79.	1879-80.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	1		—1	17,478	16,567	—911
Bareilly	2,098	8,716	+4,618	3,339	8,176	+4,837
Kheri	2,09,121	2,75,936	+66,815	1,56,719	1,64,149	—7,430
Bahraich	48,228	41,098	—4,130	35,103	29,263	—5,840
Gonda	10,066	19,942	+9,876	3,544	6,883	+3,339
Gorakhpur	35,056	36,231	+1,175	23,419	20,509	—2,910
	3,06,570	3,84,923	+78,353	2,39,602	2,45,547	+5,945

	Rs.
	78,353
Increased expenditure	5,945
In favor of year	+72,408

EXPLANATION.

Receipts.

Bareilly Division—1878-79 was a bad year ; the normal receipts being from Rs. 6,000 to Rs. 7,000 (contract in Puranpur, departmental in Pilibhít). Rs. 8,716 is not so very good, since an establishment was kept up for collection in Puranpur (but though the whole of this is charged against collections, half or more is really chargeable against permanent protective establishment which has not yet been entertained) ; on the other hand it was the first year of direct collections.

Kheri Division.—Increase: owing to increased sales and partly to arrears of past years being paid up.

Bahraich Division.—Decrease : most of the best time of the year the officer in charge was engaged in demarcation.

Gonda Division.—Increase: owing to Rs. 10,000 arrears of grazing dues having been paid up.

Gorakhpur Division.—Increase : owing to good arrangements of the officers in charge.

Expenditure.

Direction.—Decrease: Conservator's travelling allowance not charged for two months when on leave. Clerks drawing lower pay than the establishment was drawing last year.

Bareilly Division.—Increase ; works of protection being started and the establishment, " temporary, A. II.," which was not entertained last year.

Kheri Division—Increase : Rs. 5,000 purchase of house and land at Bahramghat, and more works in Bhira sub-division.

Bahraich Division.—Decrease : officer's time taken up in demarcation.

Gonda Division.—Increase : an officer's pay and travelling allowance charged, whereas there were none in 1878-79.

Gorakhpur Division.—Decrease : difficulty in getting labour owing to cholera.

37. **OUDH CIRCLE.**—The sums under "A., Conservancy and Works," and "B., Establishments," are thus detailed :—

A.

Year.	I. Timber and other produce removed from the forest by Government agency.	II. Timber and other produce removed from the forests by consumers or purchasers.	III. Confiscated, drift, or waif wood.	IV. Revenue from forests not managed by Government.	V. Rent of leased forests, &c.	VI. Live and dead stock.	VII. Communications and buildings.	VIII. Demarcation, improvement, &c., &c.	IX. Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1878-79 ...	1,09,432	3,561	11	...	...	9,798	25,543	12,130	3,740	1,64,215
1879-80 ...	98,891	6,088	...	...	...	14,270	32,608	13,408	1,267	1,66,532
Total ...	−10,541	+2,527	−11	...	...	+4,472	+7,065	+1,278	−2,473	+2,317

Explanation. I.—Decrease : caused by less Patua work, better rafting by Mr. Wilmot, and better arrangements by Babu Kanhyia Lal at Bahramghat. II.—Increase : owing to establishment for first time entered under collecting revenue in Bareilly. VI.—Increase : purchase of elephants for new officers. VII.—Increase: some of last year's expenditure came into this, but works were pushed on in Bareilly and Bhira, where there were few before. VIII.—Increase : Rs. 1,125 paid for taking up some land in Bhira. IX.—Decrease : Less refunds, and no losses from the treasure-chest as there were last year.

B.

Year.	I. Salaries.	II. Travelling allowance.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
1878-79	60,433	10,916	4,040	75,389
1879-80	63,151	12,037	3,827	79,015
Total ...	+2,718	+1,121	−213	+3,626

Explanation.—The increase under I. and II. was owing, though savings were effected in Direction division, to increased expenditure owing to Mr. Ponsonby's pay and travelling allowance being charged for the whole year, which they were not last year ; to Mr. Pinder's joining from the Panjab, and changes of officer's charges.

38. **OUDH CIRCLE.**—Though the difference between the receipts and expenditure was Rs. 1;39,386, the actual profit is shown below :—

Particulars.	Amount of receipts.
	Rs.
Receipts	2,84,933
Expenditure	2,45,547
Surplus	1,39,386
Decrease in value of timber stock...	42,940
	96,446
Add increased value of live and dead stock	14,205
Giving net surplus of	1,10,651

The sum of Rs 96,416 may be taken roughly as the net surplus of the year. I have added the increase in live and dead stock, as the other two Conservators have done so. I have not taken into consideration the revenue outstandings in Form 52, as the question is complicated with remissions on account of former years and the mixing up of timber and miscellaneous accounts: so I think it better to ask for orders on the subject in a separate letter.

39. **OUDH CIRCLE.**—I give below a statement of the amounts chargeable to the three great heads of expenditure—

Heads.	Receipts.	Amount.	Charges.	Amount.
		Rs. a. p.		Rs. a. p.
I.—Departmental timber operations.	I.	2,42,409 10 4	$A\,(1+\frac{VI.}{2.}+\frac{IX}{3.})+\frac{B.}{3.}$ ...	1,39,786 5 4
II.—Other revenue ...	II., III., IV.	1,42,513 8 8	$A\,(II+III+\frac{IX.}{3.})+\frac{B.}{3.}$ ...	82,849 0 7
III.—Formation and protection and improvement of forests.	...	...	$A\,(\frac{VI.}{2.}+VII+VIII+\frac{IX}{3.})+\frac{B.}{3.}$	79,911 10 5
Total ...	...	3,84,922 14 0	Total ...	2,45,547 0 4

40. **Oudh Proper,** with an area of 818 square miles, gave gross receipts Rs. 3,39,975 and a surplus of Rs. 1,39,804 during the year under review, or Rs. 415 gross per square mile and Rs. 171 net.

I have deducted the divisions made over to my charge for the last three years from the North-Western Provinces in order to review the Oudh figures of the past sixteen years.

The Government of India, in para. 10 of letter No. 1033 of 30th December, 1879, orders on Progress Reports, North-Western Provinces and Oudh, states that the revenue of the last few years in these Provinces does not compare favourably with the increasing revenue of some other provinces. The Conservator of the Central Circle will, I expect, be able to give good reasons for the revenue of the North-Western Provinces Proper remaining stationary. As regards Oudh Proper, appendix No. 2 shows that in the 15 years referred to by the Government of India, Oudh Proper has made steady progress: thus, during the first five years the average yearly revenue was Rs. 1,14,825, giving Rs. 140 gross and Rs. 47 net per square mile; in the second five years the average yearly revenue was Rs. 1,80,842, giving Rs. 221 gross and Rs. 56 net per square mile; and in the third five years the average yearly revenue was Rs. 3,08,388, giving Rs. 377 gross and Rs. 130 net per square mile.* In the first five years there was about an average of two European officers, in the last five years the average has been something over five; tending, I think, to show that increased revenue is due to a more efficient controlling establishment, as the selection fellings have not been so very much greater.

The last five years for the three Circles, North-Western Provinces and Oudh, give a rate per square mile of Rs. 393 gross and Rs. 114 net (appendix 3A).

	Yearly receipts.	Gross per square mile.	Net per square mile.
	Rs.	Rs.	Rs.
* 1st period	1,14,825	140	47
2nd "	1,80,842	221	56
3rd "	3,08,388	377	130

Net receipts nearly trebled.

If we compare the results of other Provinces, which are evidently referred to, *viz.* — Bengal, the Central Provinces, and Assam—we find, as per appendix 3R, *for their most favourable years* that the average per square mile is as below:—

	Gross.	Net.		
			Add spent on improvements, A.VII. or A.VIII	Total.
	Rs.	Rs.	Rs.	Rs.
Bengal per square mile	50	Net 19	+3·4	= 22·4
Central Provinces	43½	„ 29	+1·5	= 30·5
Assam	29	„ 6	+5·9	= 12·4
5 years ending 1878-79, North-Western Provinces and Oudh	393	„ 114	+30·5	=144·5
Oudh Proper for same period ...	377	„ 130	+39·4	=169·5
Ditto for 1879-80 ...	415	„ 171	+46·2	=217·2

I place all the figures together for easy comparison. It would appear from these figures that the other Provinces will take some years to obtain the results per square mile that the forests of the North-Western Provinces and Oudh have been giving for the past 5 years.

41. As affecting our net receipts, I would draw attention to the following figures:—

Works of production and improvement, (which do not give immediate returns).

	Expenditure, A.VII. and A.VIII.	Per square mile.
	Rs.	Rs.
Bengal, 1877-78	28,998	8·4
Central Provinces, 1878-79	20,492	1·5
Assam, 1878-79	32,922	5·9
North-Western Provinces and Oudh, 1878-79	1,01,618	30 5
Oudh Proper, 1878-79	32,152	39 4
Ditto 1879-80	37,817	46 2

The figures only show charges A.VII. and A.VIII., and no portion of A.VI., A.IX., and B., as shown in para. 38 of this report.

Again, as regards the cost of collection, in Bengal, from the figures at my disposal it cannot be shown how much revenue was collected by Civil Officers; but in Assam, out of Rs. 1,61,779 collected, Rs. 1,22,260 were collected by Civil Officers. In the Central Provinces the cost of collecting Rs. 6,29,909 for the 2nd class reserved forests was Rs. 1,73,926, or 27·6 per cent. These figures are taken from the Inspector-General's Report of all forests, 1868-69, page 19, and para. 77, the price of collection perhaps bearing a share of other expenditure and establishment (as in my para. 38); but to compare with the North-Western Provinces and Oudh, I will take the Central Provinces figures under II. and III. receipts, and expenditure under AII., which are Rs. 7,44,469 and Rs. 1,12,278 respectively, which give 15 per cent. as cost of collection. In the North-Western Provinces and Oudh the receipts under—

	Rs.	a.	p.	
II. and III. were	1,81,954	2	0	Central.
	1,26,395	2	11	Oudh.
	58,074	12	6	School.
	3,66,424	1	5	
and expenditure under A. II.	17,317	2	10	Central.
	3,971	9	9	Oudh.
	3,532	11	0	School.
	24,421	7	7,	or below 7 per cent. In *Oudh Proper*, the sum collected amounted to Rs. 94,332, and charges to Rs. 3,559, or under 4 per cent.

42. In the above figures I have taken the results on the area of the whole forests, as it may happen as in the Central Provinces (the 1st class reserved forests of which, I believe have hardly paid their own expenses for some years) that the bulk of the revenue comes from inferior forests, which are not being preserved as the real reserves are;* or as in Burmah, where the reserves are comparatively small, but Government derives revenue from timber from an area equal to half of the province and from duty on foreign timber; or in Mysore, where sandal wood is the chief item of revenue, this "growing not so much in the great jungles as in scattered tracts of the plain country,†" and where, if the revenue from sandal be not taken into consideration, "the operations of the Department," "chiefly directed to conservancy, show on the whole a loss rather than a profit."‡

43. I trust it will be considered that in drawing attention to the above facts and figures I by no mean endeavour to disparage the evidently excellent work being done by the Conservators in other Provinces; they appear to have obtained not only praise but rewards from the Government of India, but that such facts and figures have been brought to notice in order that it may be shown that in comparing Provinces differing so much in many respects, something more than amounts in rupees should be taken into consideration.

I trust, moreover, that it will be seen that the forests of Oudh Proper, of which I have had charge nearly 12 years, though small, give a better net profit per square mile than any other forest under the Government of India; that the revenue is collected cheaply, and that considering the difficulties connected with grazing, they do not compare unfavourably with the forests of other Provinces regarding fire conservancy.

44. The revenue of the forests of *Oudh Proper* will improve; but if Government wants more rapid progress, it has only, I believe, to put into my hands the means that I consider necessary, and for which I have been constantly applying, *viz.*,—

(1.) A system of fellings compatible with true conservancy and with the improved condition of the forests, and not fixing the limit to the 2,000 trees in the Trans-Sarda sub-division of Kheri, which small number I do not consider a fair annual yield.

(2.) A still more efficient staff of European officers.

(3.) Fair promotion for all grades of officers and men, not for showy plans, but for downright honest work.

45. Oudh has, I believe, the best sál, the best sissu, the best dhao, the best arseyna, the best ebony, and the best khair forests in British India. It has, I believe, the best system of roads, bridges and wells, I allow perhaps, easier to be made in Oudh than elsewhere. Only one-third of its forests are being worked for timber. There is an immense reserve of young timber coming on, and with these advantages, if treated in the manner I desire, I believe that Oudh will long continue to pay a better return per square mile than most forests in British India.

III.—UNRESERVED FORESTS.

46.

Blank.

*NOTE.—The Inspector-General, in para. 73 of his Review of Forests of all these Provinces, 1878-79, remarks—"As already explained, the difference is this that the 1st class reserves will be then permanently maintained as forests, while those of the 2nd class will be available for the extension of cultivation. Again in para. 77: "with regard to the sum of Rs. 6,29,902 collected from the 2nd class forests." "But the rates are exceedingly low and quanties supplied are very large." This rather looks as if it were the policy to get as much revenue at present from the 2nd class reserves, without much regard to their future deterioration. With our limited forest area in Oudh, none of which it is proposed to be cultivated we cannot follow this method, though timber may be cut freely on land that will have to be made over for grazing, and where no reproduction of young trees cant. be expected: this, however, when the *real reserves* are fixed on and demarcated.

† Mysore report, 1878-79, para. 36.

‡ Mysore report, 1878-79, para. 40.

IV.—GENERAL REMARKS.

47. Mr. Allan reports of the admirable way in which Mr. Nicholson carried out the demarcation in Bahraich. Mr. Nicholson is thoroughly acquainted with all the details of the forest villages, and it is hoped that his services will be replaced for the demarcation before the 1st of October next, so that he may be able to finish the district, which he expects to be able to do, by the end of March, 1881.

48. I have, in the body of the report, brought to notice the works of officers deserving special commendation. Mr. Ponsonby and the other superior officers have worked well, and so have the subordinate forest and office establishment, with the exception of some forest guards who have been dismissed, and Ranger's Mathura Prashad and Lila Dhar, who have not given satisfaction. I have also thought it proper to transfer Janki Prashad, the head clerk of the Gorakhpur office, from Gorakhpur to Bahraich.

49. Mr. Spedding, the Collector of Gorakhpur, has given Mr. Campbell much assistance; he takes great interest in the forests, and I think that in nominating Collectors and Deputy Commissioners to districts in which forest divisions are situated that, if it could be managed, officers who take an interest in forestry should be appointed in preference to officers who are known to have ideas opposed to fire conservancy and to the Forest Department, in order that the work between the district and forest officers may be carried out harmoniously.

50. The health of the establishment has been good on the whole. It is a remarkable fact that after such a heavy rainfall as there was in 1879, the districts near the forests did not suffer from fever to the same extent as districts further removed.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle.

STATEMENTS.

FORM No. 45—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Area of Reserved Forests, 1879-80.

Division or Range.	Names of Forests and Civil District or Territory.	*Area on 1st April, 1879.*		*Added during the year.*		*Excluded or transferred to other heads.*		*Area on 31st March, 1880.*		No and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Bareilly Division.										
Bareilly Division,...	Bareilly District	137	87,680	...	...	...	...	137	87,680	...	See para. 7 of report.
	Bhira Sub-division.										
Bhira Sub-division...	Kheri District	160	102,400	4	2,670	...	...	164	104,960	*Vide* Revenue Forest, N.-W. P. and Oudh, Notification, No. 5 of 2nd January, 1880, and No. 778, dated 17th July, 1880.	
Kheri Division ...	Niwalkhar ... } Kheri District ...	263	168,320	...	...	...	...	263	168,320		
	Khairigarh ... }										
Bahraich Division,	Motipur ... } Baraich District,	257	164,480	...	...	...	...	257	164,480		
	Bhinga ... }										
	Gonda Division.										
Gonda Division ...	Gonda District	140	89,600	3	1,749	...	...	143	91,520	Not yet notified; waiting for formal proceedings.	
	Gorakhpur Division.										
Gorakhpur Division,	„ District	115	73,600	...	...	...	...	115	73,600		
	Total ...	1,072	686,080	7	4,480	...	...	1,079	690,560		

NAINI TAL:
The 11th June, 1880.

Area of unreserved Forests, 1879-80.
Blank.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 46—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Area of Plantations, 1879-80.

Division.	Name of Plantation.	On 1st April, 1879.		During 1879-80.		On 31st March, 1880.	
		Area.	Total cost.	Area added.	Cost.	Total area.	Total cost.
		Acres.	Rs. a. p.	Acres.	Rs. a. p.	Acres.	Rs. a. p.
Gorakhpur Division	Rámgarh	269	4,692 5 8	136	1,190 11 0	405	5,883 0 8
	Sonári	40	202 3 9	...	...	40	202 3 9
	Total	309	4,894 9 5	136	1,190 11 0	445	6,085 4 5

NAINI TAL:
The 11th June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

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FORM No. 47—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Area of Forest tracts protected from fire during the dry season of 1880, (*to accompany report for* 1879-80).

Division.	Forest tracts.	*Up to 30th June, 1879.*		*During the dry season of 1880.*				Total cost up to 30th June, 1880.	Year when protection commenced.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failure.	Actually protected.	Amount expended.		
		Acres.	Rs. a. p.	Acres	Acres.	Acres.	Rs. a. p.	Rs. a. p.	
Bareilly Division ...	Mahofe Home Block	...	...	17,017	50	16,967	560 12 8	560 12 8	July, 1879.
	Total ...	...	...	17,017	50	16,967	560 12 8	560 12 8	
Bhira Sub-Division ...	Marha Home Block	5,880	924 12 5	10,637	2,432	8,205	543 10 3	1,468 4 8	January, 1877.
	Total ...	5,880	924 12 5	10,637	2,432	8,205	543 10 3	1,468 4 8	
Kheri Division ...	Dudua Home Block	3,420	5,904 14 6	22,080	500	21,580	3,090 8 11	8,995 7 5	March, 1872.
	Total ...	3,420	5,904 14 6	22,080	500	21,580	3,090 8 11	8,995 7 5	
Bahraich Division ...	Section II.	12,480	750 3 10	12,480	400	12,080	280 0 0	1,030 3 10	February, 1878.
	Charda Section V.	6,400	6,033 0 0	6,400	11	6,389	715 0 0	6,748 0 0	March, 1875.
	Section VI.	3,235		3,235	...	3,235			
	Section VII.								
	Total ...	22,115	6,783 3 10	22,115	411	21,704	995 0 0	7,778 3 10	
Gorakhpur Division ...	Ramghar and Tilkonia	6,754	3,188 6 1	6,754	...	6,754	377 5 5	3,565 11 6	June, 1875.
	Nagwa	4,000		6,000	4	5,996			
	Sonari and Jagpur	22,132		22,132	...	22,132			
	Dudhaj	8,600		8,600	100	8,500			
	Bhillampur and Banki	4,154		4,154	809	3,354			
	East Lehra	7,600		7,600	...	7,600			
	West "	12,300		12,300	...	12,300			
	Bhari, Bansi and Bhari Baban ...	6,000		6,000	...	6,000			
	Total ...	71,540	3,188 6 1	73,540	904	72,636	377 5 5	3,565 11 6	
	GRAND TOTAL ...	102,955	16,801 4 10	143,389	4,297	141,092	5,567 5 3	22,368 10 1	

NAINI TAL:
The 5th July, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 48—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Prosecutions for breaches of forest rules, 1879-80.

Forest Division and Civil District.	*Injury to forest by fire.*		*Unauthorized felling or appropriation of wood and minor forest produce.*		*Grazing without permission or in forests in which grazing is prohibited.*		*Other offences.*		TOTAL.			
									Prosecutions.		*Convictions.*	
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.
Bareilly Division.												
Bareilly district	...	...	1	24	...	...	1	2	2	26	2	26
Bhira Sub-division.												
Kheri district	...	...	2	13	...	...	...	...	2	13	2	13
Kheri Division.												
Kheri district	...	...	4	4	...	...	2	3	6	7	3	4
Bahramghát Division.												
Bara Banki district	...	...	...	...	...	...	1	1	1	1	1	1
Bahraich Division.												
Bahraich district	...	...	57	84	3	9	1	1	61	94	45	71
Gonda Division.												
Gonda district	...	...	13	15	...	...	...	...	13	15	13	15
Gorakhpur Division.												
Gorakhpur district	...	...	7	28	...	...	...	...	7	28	4	7
Total	...	...	84	168	3	9	5	7	92	184	70	137

NAINI TAL:
The 11th June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 49—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Summary of Revenue of the different Divisions, 1879-80.

BUDGET HEADS, RECEIPTS.	Direction.	Bareilly Division.	Bhira Sub-Division.	Kheri Division.	Bahraighat Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Total.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—									
a. Timber	...	...	...	29,857 12 10	2,02,396 1 2	40 0 0	...	6,792 8 1	2,38,996 6 1
b. Firewood and charcoal	...	...	...	...	2,319 2 1	916 12 0	...	120 8 0	3,356 6 1
c. Bamboos	...	...	...	...	...	...	...	...	...
d. Sandal-wood	...	...	...	...	...	...	...	...	...
e. Grass and other minor produce	...	...	...	47 14 2	9 0 0	...	...	...	56 14 2
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS :—									
a. Timber	...	1,039 4 2	143 7 9	14,130 0 8	...	21,703 0 9	10,028 9 11	19,068 11 5	66,113 2 8
b. Firewood and Charcoal	...	5,103 8 0	208 1 4	353 14 5	...	670 7 4	876 15 10	5,786 0 9	12,998 15 8
c. Bamboos	...	...	...	...	...	12 13 6	...	...	12 13 6
d. Grazing and fodder grass	...	857 1 9	3,234 14 9	15,501 12 6	...	12,958 1 6	8,315 6 0	2,050 6 11	42,917 11 5
e. Other minor produce	...	1,293 5 7	1,096 8 9	5,288 9 7	...	5,916 11 10	519 7 6	2,268 4 10	15,478 7 1
III.—CONFISCATED, DRIFT AND WAIF WOOD	...	...	115 14 0	304 2 2	6 13 5	2,275 0 0	25 10 0	...	2,727 7 7
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT:—									
a. Duty on Foreign timber and other forest produce.	...	...	...	...	...	...	...	...	...
b. Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...
V.—MISCELLANEOUS :—									
a. Fines and forfeitures	...	...	...	10 8 0	2 7 0	49 15 0	...	...	62 14 0
b. Refunds	...	108 8 5	2 9 11	78 10 8	...	0 9 3	...	0 0 5	190 6 8
c. Other sources	...	314 5 11	160 7 6	445 15 8	220 8 0	454 7 4	175 15 2	239 15 6	2,011 11 1
Total Receipts ...	...	8,716 2 10	4,962 0 0	66,019 4 8	2,04,953 15 8	44,097 14 6	19,942 0 5	36,231 7 11	3,84,922 14 0

A.—CONSERVANCY AND WORKS.										
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—										
a. Timber	...	...	...	54,673 9 4	40,221 4 11	49 8 2	...	2,783 4 3	97,727 10 8	
b. Firewood and charcoal	...	...	...	667 15 6	...	495 2 3	...	...	1,163 1 10	
c. Bamboos	...	...	...	...	...	...	...	...	...	
d. Sandal-wood	...	...	...	...	...	...	...	...	...	
e. Grass and other minor produce	...	...	...	...	...	...	...	...	...	
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS.	...	1,636 12 11	655 15 9	835 0 6	...	1,789 2 9	302 14 0	793 10 10	6,013 8 9	
III.—CONFISCATED DRIFT AND WAIF WOOD	...	...	28 0 0	46 12 4	...	...	...	...	74 12 4	
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT:—										
a. Duty on foreign timber and other forest produce,	...	...	...	...	...	...	...	...	...	
b. Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...	
V.—RENT OF LEASED FORESTS AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVERNMENT.										
VI.—LIVE AND DEAD STOCK :—										
a. Purchase of cattle	...	...	...	2,300 0 0	...	2,620 0 0	2,000 0 0	...	6,920 0 0	
b. Buildings	...	107 14 8	597 13 9	2,520 9 5	494 4 3	719 15 4	...	635 10 5	5,076 3 6	
c. Plant, tools and instruments	...	275 7 3	189 10 3	443 5 1	1,081 4 0	274 15 6	...	8 13 0	2,273 7 1	
VII.—COMMUNICATIONS AND BUILDINGS :—										
a. Roads and bridges	...	2,560 0 0	1,469 2 11	6,522 1 0	130 4 0	2,737 12 10	176 7 7	257 12 5	13,853 8 9	
b. Feed and keep of cattle	...	349 0 6	1,666 4 3	5,307 1 8	5,502 1 7	3,313 13 10	60 0 0	384 10 7	16,583 0 5	
c. Other works	...	150 0 0	374 7 6	643 3 6	...	1,003 71 8	...	...	2,171 6 8	
VIII.—DEMARCATION, IMPROVEMENT AND EXTENSION OF FORESTS :—										
a. Demarcation	...	1,300 0 0	174 9 7	126 0 9	...	1,988 10 6	137 13 0	168 7 0	3,895 8 10	
b. Compensation for land and rights	...	...	1,125 0 0	...	...	...	...	...	1,125 0 0	
c. Surveys and working-plans	...	...	...	36 14 6	...	32 14 6	...	23 7 3	93 4 3	
d. Plantations	...	...	...	4 5 0	...	...	...	...	4 5 0	
e. Protection from fire	...	309 0 0	436 0 0	2,721 2 4	...	1,120 0 3	195 8 8	544 12 8	5,326 7 11	
f. Other works	...	...	...	282 12 6	...	408 11 3	120 0 0	2,152 0 1	2,963 7 10	
IX.—MISCELLANEOUS:—										
a. Refunds	...	60 0 0	...	81 1 7	...	...	...	...	141 1 7	
b. Law charges	...	...	...	1 15 3	...	...	...	...	1 15 3	
c. Other charges	...	23 1 3	68 11 11	397 1 11	333 2 6	287 7 9	...	14 4 3	1,123 13 7	
TOTAL, A.—CONSERVANCY AND WORKS	...	6,771 4 7	6,785 11 11	77,610 15 10	47,762 5 3	16,841 14 8	2,992 11 3	7,766 12 9	1,66,531 12 3	

NAINI TAL :
The 2nd June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 49—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Summary of expenditure of the Different Divisions, 1879-80.

BUDGET HEADS, B ESTABLISHMENT.	Direction.	Bareilly Division.	Bhira Sub-division.	Kheri Division.	Bahramghat Division.	Bahraich Division.	Gonda Division	Gorakhpur Division.	Total.
I.—SALARIES —	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
a. Conservators	11,996 10 8	...	...	...	...	...	...	...	11,966 10 8
b. Superior officers	...	...	6,114 10 8	7,250 0 0	1,600 0 0	5,762 14 5	1,000 0 0	4,838 11 4	26,566 4 5
c. Subordinate Forest and Depôt establishments ...	18 13 11	412 7 7	1,442 1 0	5,130 0 6	231 12 8	2,563 10 4	1,542 15 5	5,535 15 10	16,897 13 3
d. Office establishments	1,735 0 0	543 3 3	119 14 0	2,215 14 3	444 0 0	1,163 1 0	399 11 1	660 0 0	7,320 11 7
e. Deputation and special allowances	...	...	...	...	400 0 0	...	...	...	400 0 0
II.—TRAVELLING ALLOWANCES —									
a. Conservators	1,577 1 0	...	...	...	...	...	...	...	1,577 1 0
b. Superior officers	...	...	1,388 0 0	2,062 3 0	136 4 5	1,818 8 8	314 13 4	900 9 4	6,618 6 9
c. Subordinate Forest and Depôt establishments ...	...	108 6 11	215 4 3	1,046 7 10	...	331 3 3	259 4 11	...	1,955 11 2
d. Office establishments	514 5 2	68 1 7	12 2 9	585 15 10	32 12 7	332 12 4	116 14 8	222 7 9	1,885 8 8
III.—CONTINGENCIES:—									
a. Stationery	1 13 0	19 4 0	14 4 0	24 9 0	5 0 0	2 13 2	4 12 0	11 0 0	83 7 2
b. Carriage of tents and records	286 5 4	48 4 6	38 11 0	156 5 2	...	126 10 0	75 12 4	90 0 0	831 0 4
c. Rents, rates and taxes	200 0 0	...	...	...	...	18 0 0	1 8 0	240 0 0	459 8 0
d. Pay of police guards	...	136 15 5	...	327 13 5	180 0 0	78 4 2	40 6 8	...	763 7 8
e. Official postage	106 9 6	52 15 0	46 6 6	95 14 6	79 15 0	73 3 0	20 3 9	38 2 0	513 4 6
f. Sundries	160 11 0	19 12 2	45 13 7	481 0 7	28 8 0	130 6 4	114 5 6	195 11 9	1,176 4 11
Total, B. establishments ...	16,567 5 7	1,404 6 5	9,435 3 9	19,376 4 1	3,178 4 8	12,421 6 8	3,890 10 11	12,741 10 0	79,015 4 1
Grand Total, expenditure. ...	16,567 5 7	8,175 11 0	16,220 15 8	96,987 3 11	50,940 9 11	29,263 5 4	6,883 6 2	20,508 6 9	2,45,547 0 4

NAINI TAL
The 2nd June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 50—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Account-current for the year 1879-80.

	Heads of Accounts.	Rs. a. p.	Rs. a. p.
	To cash balance on 1st April, 1879	3,263 15 5	3,263 15 5
To REVENUE RECEIVED IN CASH.	Direction Division	...	...
	Bareilly „	8,716 2 10	
	Bhira Sub-division	4,962 0 0	
	Kheri Division	63,827 3 4	
	Bahramghat Division	1,00,182 8 4	
	Bahraich Division	43,181 3 6	
	Gonda „	19,942 0 5	
	Gorakhpur „	36,231 7 11	2,77,042 9 4
To REVENUE ADJUSTED BY BOOK TRANSFER.	Public Works Department, Oudh	25,908 12 4	
	Ditto, Jumna Canals, Karnal Division	60 10 8	
	Ditto, Agra Canals Division	574 9 9	
	Ditto, Rohilkhand Canals, Bareilly	279 12 6	
	Ditto, Aligarh Ganges Canals	399 15 8	
	Ditto, Gorakhpur Provincial Division	136 3 3	
	Commissariat Department, Lucknow	108 10 2	
	Jail Department, Allahabad	1,744 8 11	
	Ditto, Lucknow	916 12 0	
	Opium Agency, Behar	77,750 5 5	1,07,880 4 8
	To Remittance from State Treasuries	2,46,162 6 9	2,46,162 6 9
To REMITTANCE BY TRANSFER FROM OTHER DEPARTMENTS.	Mathematical Instrument Department, Calcutta ...	49 5 0	
	Military Department, Bengal	193 3 11	
	Jail ditto, Kheri	45 8 0	
	Canal Foundry and Workshops, Roorkee ...	134 8 0	
	Gun Carriage Agency, Fatehgarh	3 9 0	
	Public Works Department, Military Works, Allahabad,	7 14 10	434 0 9
	Inter-Divisional Transfers	15,510 13 2	15,510 13 2
	Contributions to Funds, U. S. F. P. Fund... ...	516 15 0	516 15 0
	Permanent advance...	100 0 0	100 0 0
	Advances Recoverable	2,75,556 5 10	2,75,556 5 10
	Suspense Account...	1,108 0 0	1,108 0 0
	Deposits	200 0 0	200 0 0
	Total	...	9,27,775 6 11

Heads of Accounts.	Rs. a. p.	Rs. a. p.
By Expenditure under A.		
Direction Division	...	
Bareilly ditto	6,771 4 7	
Bhira Sub-Division	6,785 11 11	
Kheri Division	77,610 15 10	
Bahramghat Division	45,762 5 3	
Bahraich Division	16,841 14 8	
Gonda ditto	2,992 11 3	
Gorakhpur ditto	7,766 12 9	1,66,531 12 3
By Expenditure under B.		
Direction Division	16,567 5 7	
Bareilly ditto	1,404 6 5	
Bhira Sub-Division...	9,435 3 9	
Kheri Division	39,376 4 1	
Bahramghat Division	3,178 4 8	
Bahraich Division	12,421 6 8	
Gonda ditto	3,890 10 11	
Gorakhpur ditto	12,741 10 0	79,015 4 1
By Remittance to State Treasuries	2,80,949 8 8	2,80,949 8 8
„ Revenue adjusted by Book Transfer ...	1,07,880 4 8	1,07,880 4 8
„ Inter Divisional Transfer	17,201 11 9	17,201 11 9
„ Advances Recoverable	2,55,170 15 3	2,55,170 15 3
„ Suspense Account	1,108 0 0	1,108 0 0
„ Deposits Repaid	100 0 0	100 0 0
„ Cash balance on 31st March, 1880	19,817 14 3	19,817 14 3
Total	...	9,27,775 6 11

CALCUTTA: The 23rd June, 1880.

Countersigned,
A. L. HOME,
Assistant Controller-General of Forests.

NAINI TAL: The 16th July, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 51—(*Prescribed*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Statement of outstandings and liabilities on account of Contractors and Disbursers, 1879-80.

Division.	Department Debtor.			Department Creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payment made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Direction Division ...	(a) 100 0 0	1,786 3 3	1,886 3 3	320 2 3	1,937 5 2	2,257 7 5	371 4 2	...	(a) 100 0 0 Recovery of a permanent advance, by oversight credited to A. R. in October, 1877. Has been written back during the current year.
Kheri " ...	629 8 10	1,98,783 9 0	1,99,413 1 10	34,055 1 9	1,81,005 1 7	2,15,060 3 4	15,716 5 0	69 3 6	
Bhira sub-division ...	(b) 5 6 11	9,093 5 9	9,098 12 8	(d) 1,283 9 4	7,966 11 0	9,250 4 4	151 8 7	0 0 11	(b) 1 0 8 Liabilities omitted to be shown in last year's form No. 51.
Bahramghat Division .	...	3,514 2 11	3,514 2 11	3,514 2 11	...	3,514 2 11	...	...	
Bahraich " ...	...	36,136 15 8	36,136 15 8	4,027 6 9	34,800 0 7	38,827 7 4	2,690 7 8	...	(c) 247 11 5 Ditto ditto ditto. Only the net outstandings were shown.
Gonda " ...	...	15,309 5 3	15,309 5 3	557 2 6	15,170 4 2	15,727 6 8	418 1 5	...	
Gorakhpur " ...	...	5,963 6 9	5,963 6 7	1,137 3 9	6446, 3 5	7,577 7 2	1,614 0 7	...	Total, 348 12 1 Difference from last year's form No. 51.
Bareilly " ...	(c) 247 11 5	9,285 10 3	9,533 5 8	(e) 1,616 11 8	8,480 14 2	10,097 9 5	564 15 6	0 11 9	(d) 1 0 8 Less shown in form for last year.
									(e) 247 11 5 Ditto ditto ditto.
Total ...	982 11 2	*2,79,872 10 8	2,80,855 5 10	46,511 8 6	† 2,55,800 8 1	3,02,312 0 7	21,526 10 11	70 0 2	Total, 248 12 1 Difference from last year's form No. 51.

		Rs. a. p.
* Total recoveries	...	2,79,872 10 8
Amount shown in form No. 50 as credits under "A.R."	...	2,75,556 5 10
The difference represents recoveries during 1879-80, of advances in the Kheri Division originally charged to final payments.	Rs.	4,316 4 10
† Total payments	...	2 55 800 8 1
Amount shown in Form No 50 as debits under "A.R."		2,55,170 15 3
The difference, represents liabilities in the Kheri Division at commencement of the year, charged to final payments during 1879-80.	Rs.	629 8 10

CALCUTTA:
The 5th June, 1880.

A. L. HOME,
Assistant Controller-General of Forests.

FORM No. 51.

Statement of outstandings and liabilities on account of timber sales, 1879-80.

	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Kheri Division.									
Executive Engineer, Sitapur Provincial Division.	157 10 8	...	157 10 8	...	...	...	...	157 10 8	
Ordnance Department, Fatehgarh.	...	23,781 12 9	23,781 12 9	...	23,214 6 7	23,214 6 7	...	567 6 2	
Other purchasers ...	...	6,153 14 3	6,153 14 3	270 12 7	5,892 9 10	6,163 6 5	9 8 2	...	
Bahraighat Division.									
Executive Engineer, Rae Bareli Provincial Division.	...	18,254 9 8	18,254 9 8	2,965 10 9	15,288 14 11	18,254 9 8	...	...	
Executive Commissariat Officer, Lucknow.	...	108 10 2	108 10 2	49 1 2	59 9 0	108 10 2	...	...	
Executive Engineer, Western Jumna Canal, Kurnal Division.	...	60 10 8	60 10 8	8 4 9	52 5 11	60 10 8	...	...	
Ordnance Timber Agent, Fatehgarh.	4,404 8 6	...	4,404 8 6	...	...	...	...	4,404 8 6	
Resident Engineer, Oudh and Rohilkhand Railway, Bara Banki.	...	615 4 10	615 4 10	1 8 4	1,191 1 11	1,192 10 3	577 5 5	...	Since realized.
Superintendent, Central Prison, Fatehgarh.	1,912 15 11	4,000 0 0	5,912 15 11	...	3,282 2 11	3,282 2 11	...	2,630 13 0	
Superintendent, Central Prison, Bareilly.	...	7,525 12 3	7,525 12 3	2,000 8 8	1 3 7	2,001 12 3	...	5,524 0 0	
Opium Agent, Behar ...	...	77,750 5 5	77,750 5 5	25,323 2 8	52,427 1 9	77,750 5 5	...	...	
Superintendent, Central Prison, Allahabad.	...	1,231 3 2	1,231 3 2	855 11 2	375 8 0	1,231 3 2	...	...	
Executive Engineer, Lucknow Provincial Division.	...	1,106 5 5	1,106 5 5	1,044 12 8	61 8 9	1,106 5 5	...	...	
Elahi Bux of Lucknow ...	...	13 0 0	13 0 0	13 0 0	...	13 0 0	...	...	
Ali Hosein of Cawnpore ...	...	77 0 0	77 0 0	77 0 0	...	77 0 0	...	...	
Kalika of Cawnpore ...	...	194 0 0	194 0 0	194 0 0	...	194 0 0	...	...	
Harparshad of Metwapur ...	...	205 0 0	205 0 0	205 0 0	...	205 0 0	...	...	
Superintendent of Jail, Sitapur.	...	4,244 12 7	4,244 12 7	565 6 0	3,679 6 7	4,244 12 7	...	...	
Gopal Das of Lucknow ...	...	1,239 0 0	1,239 0 0	1,239 0 0	...	1,239 0 0	...	...	
Executive Engineer, Agra Canal Division.	...	574 9 9	574 9 9	...	785 6 1	785 6 1	210 12 4	...	Of this, Rs. 16-11 less accounted for by the Executive Engineer.
District Engineer, Jaunpur,	...	1,691 0 11	1,691 0 11	...	1,691 0 11	1,691 0 11	...	...	
Executive Engineer, Sitapur Provincial Division.	...	4,387 5 2	4,387 5 2	...	4,403 7 0	4,403 7 0	16 1 10	...	
District Engineer, Basti, P. W. Department.	...	1,476 1 3	1,476 1 3	...	1,476 1 3	1,476 1 3	...	...	
Chiranji Lall, forest ranger, Bareilly Division.	...	...	...	...	62 8 5	62 8 5	62 8 5	...	Since realized.
Superintendent of Jail, Shahjahanpur.	...	220 7 0	220 7 0	...	235 3 4	235 3 4	14 12 4	...	Irrecoverable less accounted for by the Superintendent.
Manager, Kantit Estate, Mirzapur.	...	...	...	...	264 6 3	264 6 3	264 6 3	...	Since realized.
Superintendent, District Jail, Allahabad.	...	606 0 7	606 0 7	...	506 0 7	506 0 7	...	100 0 0	
Oudh and Rohilkhand Railway, Lucknow.	23 13 4	...	23 13 4	...	...	...	...	23 13 4	
Total ...	6,499 0 5	1,55,516 13 10	1,62,015 14 3	34,812 15 9	1,14,950 1 7	1,49,763 1 4	1,155 6 9	13,408 3 8	

NAINI TAL :
The 8th June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 52—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE:

Statement of outstandings on account of Revenue for 1879-80.

Division.	Particulars.	Out-standings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Bareilly Division ...	Timber and other produce	...	3,172 9 6	3,172 9 6	438 6 6	2,734 3 0	The amount of Rs. 3,172-9-6 was not entered in last year's statement as outstandings were not finally decided by the Collector then.
Bhira Sub-division...	On account grazing dues	...	5,545 2 0	5,545 2 0	4,962 0 0	583 2 0	
	Ditto minor forest produce	13 0 0	..	13 0 0	..	13 0 0	
	On account of leases of minor forest produce	193 0 0	1,179 0 0	1,372 0 0	938 0 0	434 0 0	
Kheri Division...	Ditto ditto	80 12 3	...	80 12 3	...	80 12 3	
	Ditto grazing dues	1,779 4 0	3,793 6 0	5,572 10 0	3,795 13 0	1,776 13 0	
	Ditto ditto	4,830 11 0	9,330 14 9	14,161 9 9	9,374 3 6	4 787 6 3	
	Timber sales	270 12 7	...	270 12 7	...	270 12 7	
Bahramghat " ...	Timle sales	34,603 15 9	1,71,555 4 1	2,06,159 3 10	2,05,013 5 3	1,145 14 7	
Bahraich " ...	On account of lease of drift timber	550 0 0	1,570 0 0	2,120 0 0	1,575 0 0	545 0 0	Actually due at the end of September, 1880.
	Ditto grazing dues	34,263 15 5	4,599 2 0	38,863 1 5	18,324 0 8	20,539 0 9	
	Ditto minor forest produce	92 8 0	...	92 8 0	32 8 0	60 0 0	
Gonda " ...	Ditto grazing dues	31,010 5 3	...	31,010 5 3	23 010 5 3	8,000 0 0	
	Ditto other forest produce	10 9 10	...	10 9 10	...	10 9 10	
Gorakhpur " ...	Timber and other produce...	1,384 14 3	35,790 3 11	37,175 2 2	55,166 9 10	2,008 8 4	
	Total ...	1,09,083 12 4	2,36,535 10 3	3,45,619 6 7	3,02,630 4 0	42,989 2 7	

NAINI TAL,
The 16th June 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 53—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Statement of trees felled during the year 1879-80.

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year.		Felled during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
KHERI.	Newalkhar ...	Forest blocks between Dudua Chandpara.	Sál ...	2,750	165,000	1,973	78,920	4,723	243,920	Converted into logs,	4,723	243,920	...	...	4,723 trees converted into 4,723 logs, 465 useful pieces, and 723 useless pieces.
		Chandpara Sathiana, Dudua, and No. 1 Suheli line.	Asna ...	578	34,680	...	...	578	34,680	Ditto ...	578	34,680	...	...	
	Khairagarh ...	Forest blocks between Bhadi Tal and Bilryan Deeh.	Sál ...	2,867	114,680	...	...	2,867	114,680	...	2,867	114,680	...	...	
			Asna ...	140	5,600	...	...	140	5,600	...	140	5,600	...	...	
BAHRAICH.	Motipur ...	Sujauli Forest ...	Sál ...	...	...	59	1,527	59	1,527	Sold to purchasers in the forests.	59	1,527	...	...	Line fellings.
	Chakia Churda,	Chakia Forest ...	Sál ...	...	...	2	103	2	103	Ditto ...	2	103	...	...	Ditto,
	Sonari & Nugwa,	Sonari Forest ...	Sál ...	1,000	20,000	...	...	1,000	20,000	Sold locally & sent to Birdghat depôt and sold.	7·0	14,000	300	6,000	Cut departmentally.
GORAKHPUR.	Gorakhpur ...	Forest	Sál sapling,	108	108	32,377	51,958	32,485	52,066	Sold ...	32,485	52,066	...	...	All these timbers were felled and removed by purchasers on the spot.
	"	"	Hollow sál for canoes.	...	...	38	1,520	38	1,520	Do. ...	38	1,520	...	...	
	"		Asna ...	...	...	18,951	18,656	18,951	18,656	Do. ...	18,951	18,656	...	...	Ditto.
	"		Mohua ...	...	...	208	5,220	208	5,220	Do. ...	208	5,220	...	...	Ditto.
	"		Parar ...	...	...	8	8	8	8	Do. ...	8	8	...	...	Ditto.
	"		Kajrota ...	...	...	3	3	3	3	Do. ...	3	3	...	...	Ditto.
	"	"	Jamna ...	...	...	216	891	216	891	Do. ...	216	891	...	...	Ditto.
	"	"	Kosum ...	...	...	107	80	107	80	Do. ...	107	80	...	...	Ditto.
	"	"	Bel ...	...	...	10	10	10	10	Do. ...	10	10	...	...	Ditto.
	"	"	Hurra ...	...	...	1	1	1	1	Do. ...	1	1	...	...	Ditto.
	"	"	Piarua ...	...	...	202	151	202	151	Do. ...	202	151	...	...	Ditto.
	"	"	Karma ...	...	...	18	720	18	720	Do. ...	18	720	...	...	Ditto.
	"	"	Jigna ...	...	...	5	50	5	50	Do. ...	5	50	...	...	Ditto.
	"	"	Khaji ...	...	...	2	1	2	1	Do. ...	2	1	...	...	Ditto.
	"	"	Kokat ...	...	...	4,836	3,715	4,836	3,715	Do. ...	4,836	3,715	...	...	Ditto.
			Total .	7,443	340,068	59,016	163,534	66,459	503,602		66,159	497,602	300	6,000	

ABSTRACTS

Description of timber.	1st class over 6 feet in girth.	2nd class 6-4½ feet in girth.	3rd class 4½=3 feet in girth.	4th class 3-1½ feet in girth	Under 1½ feet in girth.	Total of each kind of tree.	Remarks.
Sál ...	2,412	370	250	13,181	18,236	34,449	
Asna ...	...	...	...	17,772	1,179	18,951	
Miscellaneous ...	98	74	134	516	4,794	5,616	
Total ...	2,510	444	384	31,469	24,207	59,016	

NAINI TAL:
The 17th June, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM.

FOREST DEPARTMENT, N.-W.

Statement of logs, sleepers, and other scantlings,

Division.	Forest range.	Locality.	Description of timber and scantlings.	On hand from previous year. No.	On hand from previous year. C. ft.	Cut or received during current year. No.	Cut or received during current year. C. ft.
Kheri ...	Niwalkhar ...	Forest blocks between Dudua and Chandpara.	Sál	4,172	1,05,000	1,973	98,650
			Asna ...	934	34,680	...	...
	Khairigarh ...	Forest blocks between Bhadital and Billryans Deoh.	Sál	2,867	1,14,680	...	...
			Asna ...	140	5,600	...	...
	Niwalkhar ...	Sathiana Depôt ...	Logs ...	4,328	1,73,120	86	3,440
		Dudua ...	...	237	9,480	2,709	1,08,360
	Khairigarh ..	Shitaba ...	...	1	40	1,966	78,640
		Khairigarh ...	...	3	120	108	4,320
		Ramnagar ...	...	791	31,640	136	5,440
	In transit	Ditto ...	...	1,405	56,200	...	...
Bahramghat,		Bahramghat depôt ...	Sál logs ...	572	28,270	3,013	1,58,389
			Asna ...	1,085	59,154	267	15,418
			Deodar ...	3	140	...	...
			Scantlings, Sál ...	266,633 16 stacks.	40,746	1,10,716	70,527
			Ditto, Asna ...	530	1,311	13,422 and 2 stacks.	10,989
			Ditto, Deodar,	18	26	...	...
			Pieces of Sál logs,	...	...	3,472	67,604
			Rubbish Sál pieces,	...	...	1,28[illegible]	12,08[illegible]
			Do. Asna ...	...	...	68	478
			Sál off-cuts ...	...	...	17 stacks and 4 pieces	1,624
			Ditto ...	...	...	...	Mds. 7,322
			Asna off-cuts ...	...	...	1 stack	99
			...	...	...	...	Mds. 792
			Ballis ...	...	...	*3,382 560	...
			Charcoal ...	...	...	...	1,137 Mds 2,902
			Fuel ...	...	...	...	Mds. 790
			Boiler ashes ...	...	...	...	224
			Large boats ...	...	...	55	...
			Canoes ...	...	...	15	...
			Sál scantlings ...	11,383	5,880	7,760	5,550
		Lucknow Depôt ...	Sál off-cuts ...	...	...	4 stacks	268
			Ditto ...	...	...	...	Mds. 563
			Asna ...	...	...	...	149
Gorakhpur ...	Sonari ...	Sonari Madhaulia ...	Sál logs ...	1,000	20,000	...	...
			Total ...	296,102 and 16 stacks.	748,087	150,994 24 Mds.	641,878 stacks 13,880

NAINI TAL:
The 21st June, 1880.

* Omitted

No. 54—(*Suggested*).

PROVINCES AND OUDH, OUDH CIRCLE.

out and exported during the year 1879-80.

Total.		Disposed of during current year.			Closing balance.	
No	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.
6,145	263,650	Carted to Sathiana depôt 86	2,503	100,120	3,642	163,530
		Ditto Dudhi 2,417				
934	34,680	Ditto ditto	292	11,680	642	23,000
2,867	114,680	Carted to Ramnagar	77	3,080	2,790	111,600
140	5,600	Ditto 2	32	2,180	108	4,320
		Error in last statement 30				
4,414	176,560	Transferred to Bhita, 19 rafted 452	756	30,240	3,631	145,240
		Sold 243, sawn up and used 42	...	..	27	1,080
2,946	117,840	Rafted 1,510, sold 139	1,724	68,960	1,222	48,880
		Sunk 75				
1,967	78,680	Rafted 1,967	1,967	78,680	...	...
111	4,440	... ...	...	...	111	4,440
927	37,080	Rafted 676, sunk 205	881	35,240	46	1,840
1,405	56,200	Transfer Sal, Asna 3, sold ... ... 69 Sunk 185, sold 46, reached Bahramghat ... 248	479	19,160	926	37,040
3,585	186,659	Sold 588, cut for Patna ... ... 1,060 Cut up for indents ... ... 447 Ditto saw-mill ... ... 1,206 Ditto indents 291	3,361	174,791	224	11,868
1,352	74,572	Sold to purchasers ... ... 30 „ by auction ... ... 184 Profit and loss on account of excess measurement, cubic feet. 2,088	505	28,028 2,088	847 ...	46,544 ...
3	140	... ...	...	...	3	140
377,349 and 16 stacks	111,273	Supplied on indent ... 44,195 = 16,560 Sold by auction, 78,769, and 45 stacks... 50,939 „ to purchasers ... ... 1,937 693 Given to saw-mill to be resawn ... 5,175 = 7,402 Used by department, useless scantlings... 1,276 = 1,203 Burnt in engine (and two stacks) ... 4,120 Sent to Lucknow depôt ... ... 7,760 = 5,550 Transferred to Kheri Division ... 1,757 = 308	144,643	86,775	232,706 1 stack.	24,498
13,952 and 2 stacks.	12,300	Supplied on indents ... ... 7,367 = 7,383 Sold by auction ... ... 4,472 and 1 stack = 3,031 „ to purchaser ... ... 212 = 109 Sent to saw-mill to be resawn ... 1,273 = 867 Used by department ... ... 47 = 42 Burnt in engine ... ... 461 1 stack = 606	13,832 and 1 stack	12,038	120	262
18	26	Sold to purchasers ... ... 2 = 1 Used by department ... ... 4 = 2 Burnt into engine ... ... 12 = 23	18	26	...	...
3,472	67,604	Sold to purchasers ... ... 2,065 = 42,544 „ by auction ... ... 326 = 6,327 Cut up for saw mill ... ... 390 = 1,914 Lost in transit ... ... 25 = 663 Profit and loss on account of deduction in measurement by Opium Agent, Behar, 2,470	2,806	53,918	666	13,686
1,286	12,084	Sold	1,286	12,084	...	...
68	478	„	68	478	...	...
17 stacks and 4 pieces.	1,624	„ 13 stacks	stacks 17 and 4 pieces	1,624	...	...
		Sent to Lucknow Depôt, 4 stacks ... Mds. 563	...	...	...	...
...	Mds. 7,322	Ditto ditto	...			
		Sold to purchasers 6,789	...	7,322	...	...
1 stack	99	„ by auction	1 stack	99	...	...
...	Mds. 792	Sent to Lucknow Depôt, ... Mds. 149	Mds.	792	...	...
3,942	...	Sold to purchasers ... ... 643 Ditto ... ... 1,413 Used by department 173	... 1,586	...	2,356	...
...	Mds. 4,040½	Sold to purchasers ... ... Mds. 3,748 Used by department ... ... 3 Used in filling up pits refused dust ... 290½	...	4,040½	...	...
...	Mds. 790	Sold to purchasers	...	Mds. 790	...	...
...	224	Ditto	...	224	...	...
55	...	Sunk in river	1	...	54	...
15	...	Sold by auction	11	...	4	...
19,143	11,431	Sold to purchasers ... ... 7,767 = 3,333 „ by auction ... ... 14,210 = 7,946	18,977	11,279	166	152
4 stacks.	268	„ to purchasers	4 stacks	268	...	...
...	Mds. 563	Ditto	...	Mds. 563	...	...
...	149	Ditto	...	149	...	...
1,000	20,000	Ditto ... ... 700 = 14,000	700	14,000	300	6,000
447,096	1,387,965		196,505	743,847	250,591	644,118
40	stacks 13,880½		30	stacks. Mds 13,880½	10	stacks. ...

last year.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 55—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Statement of timber and other produce brought to Depôt from the different Forest Divisions 1879-80.

Division.	Forest.	Description of timber, &c.	No. of Pieces.	No. of Cubic feet.	Total of each division. Pieces.	Total of each division. Cubic feet.	Remarks.
Kheri.	Niwalkhar ...	Sál logs	2,503	1,00,120	...	...	
		Asna logs	292	11,680	2,795	1,11,800	
		Ballis	...	...	...	...	
		Charcoal	Mds.	1,827	Mds.	1,827	
	Khairigarh ...	Sal logs	77	3,080	...	...	
		Asna logs	2	80	79	3,160	
		Ballis	636	...	636	...	
	Nagwa ...	Charcoal	Mds.	866½	Mds.	366½	
Gorakhpur.	Sonari ...	Sál logs	542	...	...	...	
		„ Laggis ...	28	...	...	...	
		„ Ballas	157	...	...	...	
		„ Gurhas	158	...	...	...	
		„ Oars	7	...	...	...	
		„ Tops	11	...	...	...	
		„ Rafting ballas ...	131	...	...	...	
		„ Poles	10	...	...	...	
		„ Small bits ...	103	...	1,147	...	
		Total ...	...	...	4,657	1,14,960 2,693½	Cubic feet. Maunds.

73 Logs recovered from river and 19 logs not taken by Captain Bazette of the Ordnance Department are not shown in this form, though they are brought on stock in Form 56 as received during the year.

E. WOOD, CAPTAIN,

Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

NAINI TAL:
The 21st June, 1880.

FORM No. 56—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Account of Timber and other produce, 1879-80.

Particulars.		Pieces.		Total.	
		Number.	Cubic feet.	Number.	Cubic feet.
Balance in hand at commencement of year.					
Kheri Division	Logs and pieces	5,860	...		
	Ditto (in transit)	1,405	...		
Bahramghat Division	Logs, Sál	572	...		
	" Asna	1,085	...		
	" Deodar	3	...		
	Scantlings, Sál	...	40,746		
	" Asna	...	1,311		
	" Deodar	...	26		
	Ballis	3,862	...		
	Charcoal	Maunds.	2,902½		
Lucknow Division	Scantlings, Sál	...	5,880		
Bahraich Division	Canoes	505	...		
	Fuel	Maunds.	11,703 13/20		
Gorakhpur Division	Koros and Golas	5,144	...		
	Pieces of firewood	6	...		
	Total	...	...	17,462 Maunds.	47,963 c. ft. 14,606 9/20
Received during the year.					
Kheri Division	Logs and pieces (forest)	2,874	...		
	Ditto (river)	73	...		
	" (not taken by Captain Bazette	19	...		
	" (in transit)	333	...		
	Scantlings, Sál	...	30,787		
	Ballis	636	...		
	Charcoal	Maunds.	1,827		
	Fuel	Maunds.	19,000		
	Large boats	35	...		
	Canoes	543	...		
Bahramghat Division	Logs, Sál	3,013	...		
	" " (in transit)	578	...		
	" Asna	267	...		
	" " (in transit)	80	...		
	Scantlings, Sál	...	70,527		
	" Asna	...	10,989		
	Off cuts and other pieces, Sál	...	81,312		
	Ditto ditto, "	Maunds.	7,322		
	Ditto ditto, Asna	...	577		
	Ditto ditto, "	Maunds.	792		
	Ballis	560	...		
	" (in transit)	76	...		
	Charcoal	Maunds.	1,138		
	Fuel	Ditto.	790		
	Boiler ashes	Ditto.	224		
	Large boats	55	...		
	Canoes	15	...		
Lucknow Division	Scantlings Sál	...	5,550		
	Off-cuts and other pieces, Sal	...	268		
	Ditto ditto, "	Maunds.	563		
	Ditto ditto, Asna	Ditto.	149		
Gorakhpur Division	Koros and Golas, Sál	1,147	...		
	Charcoal	Maunds.	866½		
	Total	...	...	10,304 Maunds.	Cubic feet. 169,530·87 32,671½
	Grand Total	...	...	27,766 Maunds.	Cubic feet. 217,493·87 47,277 11/40.

FORM No. 56—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Account of Timber and other produce, 1879-80—(continued).

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Removed by purchasers.					
Kheri Division ...	Legs and pieces, Sál	365	...		
	Ditto, Sissu	135	...		
	Canoes	9	...		
Bahramghat Division ...	Logs, Sal	588	...		
	„ Asna	214	...		
	Scantlings, Sál	...	68,192		
	„ Asna	...	10,524		
	Off-cuts and other pieces, Sál ...	...	62,311		
	Ditto, ditto	Maunds.	643		
	Charcoal	Maunds.	3,748		
	Off-cuts and other pieces, Sál ...	Ditto.	6,759		
	Ditto ditto, Asna ...	...	577		
	Ditto ditto, „ ...	Maunds.	790		
	Boiler ashes	Ditto.	224		
	Canoes	11	...		
	Ballis	1,413	...		
Lucknow Division ...	Scantlings Sál	...	11,279		
	Off cuts and other pieces Sál ...	...	268		
	Ditto ditto „ ...	Maunds.	563		
	Ditto ditto Asna ...	Ditto	149		
Bahraich Division ...	Canoes	1	...		
	Fuel	Maunds.	3,667		
Gorakhpur Division ...	Koros and Golas and Sál	4,612	...		
	Charcoal	Maunds.	866½		
	Total	...	...	7,348 Maunds.	153,151 c. ft. 17,460½
Lost or used by Department.					
Kheri Division ...	Logs and pieces	321	...		
	Charcoal	Maunds	92		
	Fuel (burnt into charcoal) ...	Ditto.	15,000		
	Canoes	84	...		
	Scantlings, Sál	...	307·87		
	Large boat	1	..		
Bahramghat Division ...	Scantliegs, Sál	...	13,032		
	Ditto Asna	...	1,540		
	Off-cuts and pieces, Sál	...	5,047		
	Ballis	173	...		
	Charcoal	Maunds.	292½		
	Large boat	1	...		
	Logs Sál, (conerted into scantlings) ...	2,773	...		
	„ Asna, (ditto) ...	291	...		
	Total	...	...	3,644	19,926·87 c ft. 15,344½ Mds.
Otherwise removed (these are merely transfers from one Division to another), and the items are included under "received during the year."					
Kheri Division ...	Logs, Sál	3,591	...		
	„ Asna	347	...		
	Charcoal	Maunds.	1,138		
	Ballis	636	...		
Bahramghat Division ...	Scantlings, Sál	...	5,550		
	Off-cuts and other pieces, Sál ...	..	268		
	Ditto ditto, „ ...	Maunds.	563		
	Ditto ditto, Asna ...	Ditto.	149		
	Total	...	...	4,574 Maunds.	5,518 c ft. 1,850
	Grand Total of disposals ...	...	...	15,566 Maunds.	1,78,895·87 34,643½

FORM No. 56—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Account of Timber and other produce, 1879-80—(concluded).

Particulars.		Pieces.		Total.	
		Number.	Cubic feet.	Number.	Cubic feet.
Balance in hand at close of year.					
Kheri Division ...	Logs, Sál	4,912	...		
	„ Asna	393	...		
	Charcoal	Maunds.	597		
	Fuel	Maunds.	4,000		
	Large boats	34	...		
	Canoes	450	...		
Bahramghat Division ...	Logs, Sál	224	...		
	„ „ (in transit)	578	...		
	„ Asna	847	...		
	„ „ (in transit)	80	...		
	„ Deodar	3	...		
	Scantlings, Sál	...	24,498		
	„ Asna	...	262		
	Off-cuts and pieces of Sál ...	...	13,688		
	Ballis	2,356	...		
	„ (in transit)	76	...		
	Canoes	4	...		
	Large boats	54	...		
Lucknow Division ...	Scantlings Sál...	...	152		
Bahraich Division ...	Canoes	504	...		
	Fuel	Maunds.	$8,036\frac{13}{20}$		
Gorakhpur Division ...	Koros and Gulas, &c., Sál... ...	1,685	...		
	Total	...	...	12,200	38,598 c. ft. $12,633\frac{13}{20}$ Mds.
	GRAND TOTAL	...	...	21,766	217,493·8 c. ft. $47,277\frac{11}{40}$ Mds.

NAINI TAL:
The 6th July, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 59—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Statement showing the revenue derived from and expenditure incurred on timber and other produce sold to Public Departments during the year 1879-80.

Description of supplies.	Amount supplied.	Rate. At.	Rate. Per.	Amount of Revenue. Due.	Amount of Revenue. Received.	Amount of Revenue. Outstanding.	Cost, Forest Department. Timber expenses under A1.	Cost, Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost, Forest Department. Total.	Comparison of Revenue and Expenditure. Surplus.	Comparison of Revenue and Expenditure. Deficit.	Remarks.
Kheri Division.	Cubic feet.	Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs.	Rs.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Logs, Sál	14,048 5 9	1 10 0	cubic foot,	23,723 13 8	22,281 3 10	...	1,154	964	2,118 0 0	21,605 13 8	...	
Logs, Asna	7,018 4 7 / 3,123 10 8	0 6 0 / 0 4 0	"	3,412 13 9	3,412 13 9	...	705	138	843 0 0	2,569 13 9	...	
Scantling, Sál	159 10 6	1 12 0	...	279 12 6	279 12 6	...	700	11	711 0 0	...	431 3 6	Against Irrigation Department, Rohilkhand Canals, Bareilly, N.-W. P.
Total ...	...	...	...	27,416 7 11	25,973 14 1	...	2,559 0 0	113	3,672 0 0	24,175 11 5	431 3 6	
Bahramghat Division.												
Sál scantlings	13,378 0 0	2 14 9¾	cubic foot,	39,143 11 2	38,575 2 0	568 9 2						
Asna scantlings	3,379 0 0	1 13 4	"	6,255 2 0	6,255 2 0	...						
Ballis	No. 20	1 9 3	Ballis ..	31 9 0	31 9 0	...	40,221 0 0	10,719	50,940 0 0	47,029 0 0	...	
Saw-dust	...	...	...	50 0 0	50 0 0	..						
Hire of Government boats ...	...	...	...	61 15 0	61 15 0	...						
Pieces of Sál logs	C. feet 42,545	1 3 7½	cubic foot.	52,427 1 9	52,427 1 9	...						
Total ...	...	...	...	97,969 6 11	97,400 13 9	568 9 2	40,221 0 0	10,719	50,940 0 0	47,029 0 0	...	
Bahraich Division.												
Fuel	Mds. 3,667	25 0 0	Mds. 100	...	916 12 0	...	495 2 4	245	740 2 4	176 9 8	...	
Total ...	..	...	...	...	916 12 0	...	495 2 4	245	740 2 4	176 9 8	...	
GRAND TOTAL. ...	...	...	...	1,25,385 14 10	1,24,291 7 10	568 9 2	43,275 2 4	12,077	55,352 2 4	71,381 5 1	431 3 6	
						Deduct deficit	...	...	...	431 3 6		
						Balance for the Department	...	...	...	70,950 1 7		

NAINI TAL:
The 1st July, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 60—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of timber and of live and dead stock for the year 1879-80.

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
Direction Division.											
3. Tools	1	1	...	...	1	1	...	...	1	1	
4. Office furniture...	44	90	6	29	50	119	...	...	50	119	
5. Tents and equipages	7	210	...	...	7	210	...	...	7	210	
7. Miscellaneous	4	4	...	...	4	4	...	...	4	4	
Total ...	56	305	6	29	62	334	...	...	62	334	
Bareilly Division.											
3. Tools	106	24	3	36	109	60	7	1	102	59	7 transferred to Bhira.
4. Office furniture...	1	3	10	46	11	49	...	...	11	49	
5. Tents and equipages	...	...	5	86	5	86	...	...	5	86	
7. Miscellaneous	28	22	36	102	64	124	...	...	64	124	
Total ...	135	49	54	270	189	319	7	1	182	318	
Bhira Sub-division.											
Live stock.											
Elephants	1	3,000	...	...	1	3,000	...	...	1	3,000	
Dead stock.											
1. Surveying and other instruments ...	2	50	...	...	2	50	...	...	2	50	17 broken and made into 4 new ones.
3. Tools	134	28	17	1	151	29	17	3	134	26	3 broken.
4. Office furniture...	10	41	11	68	21	109	3	6	18	103	
5. Tents and equipages	5	190	5	86	10	276	...	...	10	276	
6. Building materials, small stones, and house-fittings.	81	146	...	...	81	146	...	...	81	146	
7. Miscellaneous	76	75	7	80	83	155	...	...	83	155	
Building	1	4,000	...	...	1	4,000	...	...	1	4,000	
Total ...	310	7,530	40	235	350	7,765	20	9	330	7,756	

FORM No. 60—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of timber and of live and dead stock for the year 1879-80—(continued).

Description of timber and other stock.	On hand at Commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value	Number.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
Kheri Division.											
Suthiana Depôt logs	4,328	64,920	86	1,290	4 414	66,210	756	11,340	3,658	54,870	
Dudua do.	237	4,740	2,709	54,180	2,946	58,920	1,724	34,480	1,222	24,440	
Khairigarh do.	3	94	108	3,375	111	3,469	...	...	111	3,469	
Shitaba do.	1	30	1,966	58,980	1,967	59,010	1,967	59,010	...	...	
Ramnagar do.	791	23,730	136	4,080	927	27,810	881	26,430	46	1,380	
Large boats	23	9,200	12	4,800	35	14,000	1	400	34	13,600	1 sunk during flood.
Canoes	517	10,340	26	520	543	10,860	93	1,860	450	9,000	9 sold, 84 sunk in river.
Live stock.											
Elephants	2	7,300	1	2,300	3	9,600	...	...	3	9,600	
Bullocks	12	310	...	...	12	310	4	110	8	200	4 died.
Buffaloes	22	220	...	...	22	220	10	100	12	120	10 died.
Dead stock.											
1 Surveying and other instruments ...	13	695	...	...	13	695	...	...	13	695	
3 Tools	1,949	1,691	549	110	2,498	1,801	271	149	2,227	1,652	
4 Office furniture...	213	688	63	154	276	842	5	5	271	837	
5 Tents	15	204	3	268	18	472	6	35	12	437	
6 Building materials and house-fittings, &c.,	...	1,174	...	24	...	1,198	...	339	...	859	
7 Miscellaneous	104	2,116	112	33	216	1,149	30	65	186	1,084	
Country carts	15	330	...	...	15	330	5	130	10	200	
Buildings	5	15,500	1	4,000	6	19,500	...	...	6	19,500	
Total ...	8,250	1,42,282	5,772	1,34,114	14,022	2,76,396	5,753	1,34,453	8 269	1,41,943	
Bahramghat Division.											
Sál logs	572	25,750	3,013	1,35,585	3,585	1,61,335	3,361	1,51,255	224	10,08[illegible]	
Asna logs	1,085	20,344	267	5,006	1,352	25,350	505	9,467	847	15,881	
Deodar	3	270	...	...	3	270	...	...	3	270	
Sál Scantlings, cubic feet	40,746	30,559	70,527	52,896	1,11,273	83,455	86,775	65,081	24,498	18,374	
Sál Scantlings (Lucknow Depôt) ...	5,880	4,410	5,550	4,162	11,430	8,572	11,278	9,458	152	114	
Asna ditto, Bahramghat Depôt ...	1,311	983	10,989	8,242	12,300	9,225	12,038	9,029	262	196	
Deodar ditto ditto ...	26	52	...	...	26	52	...	...	26	52	
Sál off cuts and pieces of logs ...	...	...	67,604	33,802	6,7604	33,802	53,918	26,959	13,886	6,843	
Asna ditto ditto ...	...	...	...	395	...	395	...	395	...	...	

Sál rejected timber, &c. ...	...	...	13,708	6,854	13,708	6,854	13,708	6,854	...	...	
Fuel	...	...	790	158	790	158	790	158	...	...	
Charcoal ... ... maunds ...	2,902	1,161	1,137	455	4,040	1,616	4,040	1,616	...	...	
Boiler ash	...	...	224	62	224	72	224	62	...	...	
Ballis	3,382	634	560	105	3,942	739	1,586	297	2,356	442	
Large boats	...	...	55	27,500	55	27,500	1	500	54	27,000	*1 sunk in river in transit to Patna.
Canoes	...	...	15	300	15	300	11	290	4	80	Rs. 70 fetched more than was estimated.
Live Stock.											
Buffaloes	10	100	...	...	10	100	...	...	10	100	
Dead Stock.											
Machinery	24	27,000	...	...	24	27,000	...	...	24	27,000	
2. Tools	342	1,404	...	...	342	1,404	...	...	342	1,404	
3. Office furniture	68	263	...	...	68	263	...	...	68	263	
4. Building materials, small stores, and house fittings.	6	26	...	...	6	16	...	...	6	16	
6. Miscellaneous	...	626	...	1,254	...	1,880	...	1,084	...	796	Used in saw mill.
Timber transport cart (Angarh) ...	1	50	...	...	1	50	...	...	1	50	
Country carts	5	50	...	...	5	50	...	...	5	50	
Total ...	5,568	1,41,542	3,840	2,48,976	9,408	8,90,518	5,464	2,81,505	3,944	1,09,013	
Bahraich Division.											
Fuel	11,703	1,760	...	...	11,703	1,760	* 3,667	916	† 8,036	844	* Sold. † Removed by the Commissariat Department, but account not yet settled.
Large boats	15	6,000	...	...	15	6,000	12	4,500	3	1,500	12 transferred to Kheri Division.
Canoes	505	10,100	...	...	505	10,100	1	40	504	10,060	1 sold.
Live Stock.											
Elephants	1	1,000	1	2,600	2	3,600	...	...	2	3,600	
Buffaloes	...	...	2	20	2	20	...	...	2	20	
Dead Stock.											
1. Surveying and other instruments ...	15	170	6	7	21	177	...	...	21	177	
3. Tools	865	532	20	8	885	540	15	6	870	534	Sent to Commissariat Department.
4. Office furniture	174	424	9	18	183	442	...	...	183	442	
5. Tents	13	270	1	200	14	470	...	...	14	470	
6. Building materials, &c.	95	107	4	8	99	115	6	30	93	85	2 transferred to Kheri Division.
7. Miscellaneous	52	90	...	...	52	90	...	...	52	90	4 used by Department.
Buildings	8	13,000	1	2,000	9	15,000	...	...	9	15,000	
Total ...	1,743 11,703 mds.	33,453	44	4,861	1,787 11,703 mds	38,314	34 3,667 mds.	5,492	1,753 8,036	32,822	
Gonda Division.											
Sál scantlings	494	10	...	...	494	10	...	...	494	10	
" pieces	2	1	...	...	2	1	...	...	2	1	
" ballis	12	6	...	...	12	6	...	...	12	6	
Live Stock.											
Elephant	...	...	1	2,000	1	2,000	...	...	1	2,000	
Dead stock.											
1. Surveying and other instruments ...	1	25	...	...	1	25	...	...	1	25	
2. Tools	302	236	...	...	302	236	...	...	302	236	
4. Office furniture	46	268	...	...	46	268	3	3	43	265	3 lost.
5. Tents	2	200	...	...	2	200	...	...	2	200	
6. Building materials, &c.	14	5	...	...	14	5	...	...	14	5	
7. Miscellaneous	2	2	...	...	2	2	...	...	2	2	
Total ...	875	753	1	2,000	876	2,753	3	3	873	2,750	

FORM No. 60—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of timber and of live and dead stock for the year 1879-80—(*concluded*).

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
Gorakhpur Division.											
Timber	5,150	1,022	1,147	7,197	6,297	8,219	4,612	7,503	1,685	716	The value at commencement of the year was estimated at a lower rate and as the timber fetched a very good price, hence the difference which has been accounted for in column received during the year.
Live stock.											
Elephant	1	2,000	...	...	1	2,000	...	...	1	2,000	
Dead stock.											
1. Surveying and other instruments ...	7	40	1	3	8	43	...	...	8	43	
3. Tools	124	80	...	...	124	80	...	...	124	80	
4. Office furniture	35	150	...	...	35	150	...	...	35	150	
5. Tents	5	400	...	...	5	400	...	...	5	400	
7. Miscellaneous...	132	80	...	...	132	80	...	...	132	80	
Buildings	4	4,000	...	...	4	4,000	...	...	4	4,000	
Total ...	5,448	7,772	1,148	7,200	6,606	14,972	4,612	7,503	1,994	7,469	
GRAND TOTAL ...	22,395	333,686	10,905	397,685	33,300	731,371	15,893	4,28,966	17,407	3,02,405	

NAINI TAL:
The 10th July, 1880.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

SUPPLEMENT TO FORM No. 60—(*Suggested*).

Forest Department, N.-W. Provinces and Oudh, Oudh Circle.

Showing value of timber stock, 1879-80.

		No.		Rs. a. p.		Rs. a. p.	Rs. a. p.
Kheri Division.							
Sathiana depôt	Logs	3,658	@ 40 cubic feet, @	0 6 0	per cubic feet ...	54,870 0 0	1,10,390 0 0
Dudna	,, ...	1,222	,, 40 ,, ,,	0 8 0	,, ...	24,440 0 0	
Khairigarh ,, ...	,, ...	111	,, 50 ,, ,,	0 10 0	,, ...	3,468 12 0	
Shitaba ,, ...	,, ...	...	,, ... ,, ,,	...	,, ...	...	
Ramnagar ,, ...	,, ...	46	,, 40 ,, ,,	0 12 0	,, ...	1,380 0 0	
Bahramghat ,, ...	,, Sál	224	,, 45 ,, ,,	1 0 0	,, ...	10,080 0 0	
,, ,, ...	,, Asna	847	,, 50 ,, ,,	0 6 0	,, ...	15,881 4 0	
,, ,, ...	,, Deodar	3	,, 45 ,, ,,	2 0 0	,, ...	270 0 0	
In transit ,, ...		926					
Bahramghat ,, ...	Scantlings, Sál	...	24,498 ,, ,,	0 12 0	,, ...	18 373 8 0	25,963 12 0
Lucknow	,, ,, ...	...	152 ,, ,,	0 12 0	,, ...	114 0 0	
Bahramghat	,, Asna	...	262 ,, ,,	0 12 0	,, ...	196 8 0	
,, ...	Off-cuts, Sál	...	13 686 ,, ,,	0 8 0	,, ...	6,843 0 0	
... ...	Ballis	2,355	... ,, ,,	0 3 0 each	,, ...	441 12 0	
Gorakhpur Division ...	Koros and golas	1,685	... ,, ,,	20 0 0	per 100 mds. ...	337 0 0	337 0 0
Bahraich Division ...	Canoes	504	... ,, ,,	20 0 0	each ,, ...	10,080 0 0	10,923 13 6
Bahraich Division ...	Firewood	Maunds, $8,036\frac{13}{20}$	,, ,,	10 8 0	per 100 mds. ...	843 13 6	
At the edge of forest ...	Ditto	Maunds, 4,000	Not valued		,, ...		
	Charcoal	Maunds, 597					
					Total value ...	...	1,47,619 9 6

	Rs.	a.	p.
Value of timber stock, 1878-79 ...	1,90,559	12	5
1879-80 ...	1,47,619	9	6
Decrease in value, Rs.	42,940	2	11

Naini Tal:
The 10th July, 1880.

E. WOOD, Captain,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDICES.

APPENDIX I.

Dated the 10th February, 1880.

From—CAPTAIN E. S. WOOD, *Conservator of Forests, Oudh Circle,*

To—All Divisional Forest Officers in the Oudh Circle.

SIR,—I have the honour to forward copy of extracts of a pamphlet entitled "The exact measurement of trees and its applications", by Sir Robert Christison, Bart, Hon. V. Pt., R. S. E., &c., and to request that you will select certain areas of sál forest, four or more exact quarter acres, and have the trees numbered. The numbers should be all on one side of the tree, facing the point C. in the plan annexed, and should be 6 feet from the ground and should be numbered as the survey progresses either with paint or with painted tickets nailed or fixed on to the trees, and a white ring painted on each tree, as explained in Conservator's note on the extract from the pamphlet, and the trees measured carefully and the measurements inserted in form like the accompanying.

2. The measurements should be taken as soon as possible after receipt of paint, measuring tapes and brushes; the days of month and year should be stated; and again on the 1st June and 1st December next, and for the future on the 1st February, 1st June, and 1st December, yearly. The measurements should be sent to Conservator's office as soon after they are made as possible.

3. The quarter acre plots should be in forests which contain trees of the mixed classes (1st, 2nd, 3rd, and 4th class trees) and also in forests where the trees are much of the same age.

4. A plan of how the trees stand on the quarter acre should be given in with the first measurements to show how the trees stand relatively to each other, and how much superficial space there is round them.

5. It would be as well for the quarter acres to be surrounded by a 2-feet trench. The quarter acre should be taken 66 feet broad by 165 feet long, and it should be stated whether the plot is alongside a road or surrounded by similar forest. If alongside a road, the breadth should adjoin the road, not the length.

6. Miscellaneous trees should be also given in the plan, but only the dimensions of "asna" need be given besides sál.

In order to save time the areas should be selected at once, and the trenches dug and pegs prepared and placed 15 feet apart on the inside of the trench.

7. The measuring tapes, brushes, paint and whipcord will be supplied by the Conservator, who will have the tapes for all divisions the same. These tapes should only be used for this one specified purpose, and great care should be taken of them, not to stretch them or get them torn.

8. The paints will be obtained from Calcutta in bulk and supplied to divisional officers from the Bahramghat depôt.

9. Officers will make arrangements for the adjustment of accounts with the Superintendent, Bahramghát depôt.

10. The paint and whipcord will be chargeable to A.VIIIe, and the measuring tapes and brushes to A.VIc.

Extract from a pamphlet entitled "The exact measurement of trees and its applications," by Sir Robert Christison, Bart, Hon. V. Pt., R. S. E., &c.

"In this way a fair comparison may for the most part be made between one tree and another. But when comparative measurement is resorted to for ascertaining whether and how much a tree is increasing, greater precautions must be observed. A point being chosen as near the 5-foot level as possible, the exact place should be such as will allow

the tape* to go round at right angles to the axis of the trunk; without passing over any protuberance or prominent bit of bark which does not admit of removal with a knife or rasp. The tape ought then to be applied so as to be in the same plane all round as far as possible, and it should be applied with moderate tightness from beginning to end, so as to avoid the risk of overstretching by pulling the two ends where they meet. Lastly, before removing the tape, the precise line of measurement must† be marked by short thin lines with white oil paint‡ close to the upper edge of the tape, at distances of about 18 inches all round. Thus subsequent measurement on the very same line as at first is rendered easy, and there is no other way of securing the necessary exactness. There is no occasion for the marks being so large as to be at all obstrusive. The measurement of one tree should be noted before proceeding to another, and when many are measured, a number should be painted in small figures near the line on the least conspicuous part of the circle, for reference in a list. Before recommencing in a subsequent season, care of course should be taken to ascertain that the tape had not undergone stretching in the interval.

"Of the various applications which may be made of the measurement of trees, I may pass by that which mainly concerns the wood merchant, because he is familiar with the rules of his trade for estimating the cubic feet of wood in a tree—rules which have been fixed by long practice.

"The most important application, in the interests of forestry and of science, is to determine the rate of growth of a standing tree. If this can be done easily and accurately year after year, it is obvious that a field in which little has yet been attempted will be opened up for study on the part of foresters or forest owners. Now I have satisfied myself by frequent trial that by the foregoing method the same measurement may be repeated again and again, at intervals of a few days, with results varying by half a tenth of an inch only on a circumference of 8 or 10 feet. It is easy, then, to see how this method may be applied so as to settle in a very few years by annual observations, the influence on the growth of trees arising from different soils and depth of soil, average temperature, average rainfall or rainy days, sunshine, altitude above the sea, distance from the ocean, exposure, and eminently from manures, the effect of which, singularly enough, has been almost entirely neglected. Measurements having once been made with the precautions mentioned, they may be repeated at any subsequent interval with ease in a short time, and on a great number of trees from what we know of the actual growth of healthy trees of many species, the annual increment will be a very sensible quantity; and by a three-years' series of such observations, the fallacy arising from variations of season may be in a great degree eliminated.

"With the precautions which have been recommended, this method of measurement is so delicate as even to appreciate in quickgrowing trees differences at different periods of a single year. And so it may settle the question which has been lately started by some arboriculturists, whether trees with evergreen foliage make wood during the season when deciduous trees are destitute of leaves.§ For this and other purposes, with the authority of Professor Balfour and Mr. McNab, a number of measurements were taken last May, when the budding of trees had only begun, in the botanic garden and arboretum. Fifty-two trees have been measured and marked, and a record of them has been deposited with other documents of the Botanical Society in the custody of Mr. Sadler."

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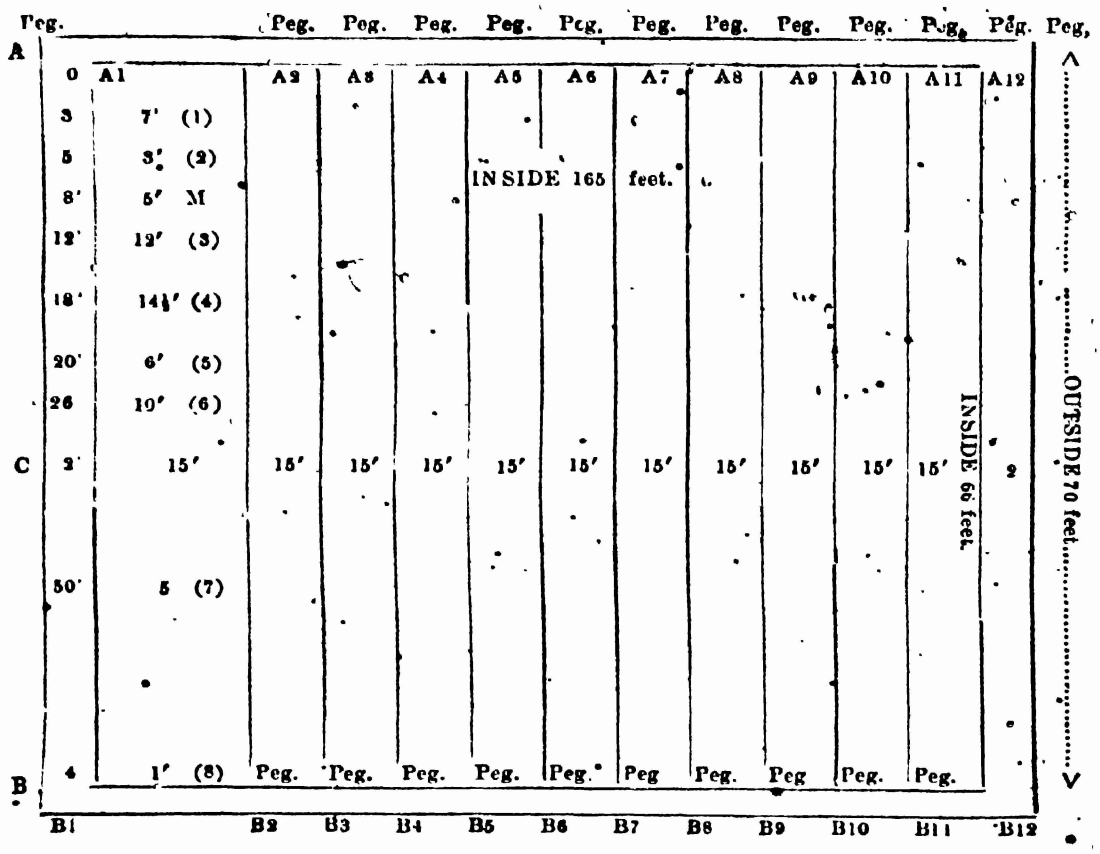
* The tape should be one kept specially for the purpose, and will be supplied by Conservator.—E. W.

† As we do not care about marking the trees (it is different in a private park in England, where such marks would interfere with the beauty of the tree); Conservator would have a line one inch thick drawn round the tree, the lower edge of the tape to correspond with the top of the line; the top of the line would have a clearer outline than the bottom, if the paint ran at all, a fine whipcord should be put round the tree at 5 feet from the ground horizontally, well fixed and the line painted below it.—E. W.

‡ Made with oxide of zinc instead of whitelead; white paint is far more durable.—*Original note.*

§ This remark of Sir Robert was made after my letter was written reporting on two sál trees referred in para. 18 of this report; the date of my letter is January, 1878, in which I raise the same question.—E. W. 12th July, 1880.

OUTSIDE, 169 feet.



After the trench is dug pegs should be driven 15 feet apart along the length of the line.

The offsets should always be taken one way, that is, working from A^1 to B^1; A^2 to B^2; the offsets should be all to the left.

The numbers painted on the trees should, all face the point C.

Measurements to ascertain the growth of Sál, _____ *Sub-division,* _____ *Division,*

Name of ¼ acre plot, exact situation in forest block.	Date of measurements.	Serial number.	Description of true, sál or ar-seyna.	Girth at 5 feet from the ground.	Special remarks on any particular trees.	General remarks.
				ft. inch		
No 1, situated end on to the road which passes to the east of the Nugwae block at 5 miles 3 furlongs from the Nugwa chauki and in compartment No. 3 of the Soheli block.	18th Feby, 1880.	1	S.	5 3	Hollow.	This part of the forest has been protected from fire for 5 years, soil light and sandy with a good deal of long grass. There are stumps of 1st class trees, 3 in number, near serial numbers 6 and 7, which were felled 6 years ago. Very few miscellaneous trees in the plot, only one large *haldu*, and the rest 5th class *asid*.
	...	2	S.	1 0 8/16	Division in two at 18′.	
	...	3	S.	2 11 1/16	Very tall.	
	...	4	S.	3 5 7/16	Short.	
	...	5	A.	1 1 3/16	Unhealthy.	
	...	6	S.	1 0 7/16	Top broken.	
	19th Feby, 1880.	7	S.	1 8 1/16	Stag headed	
	...	8 &c.	A.	2 5 2/16	Dying.	

N. B.—Each quarter acre block should have its own serial number.

FIELD BOOK.—(*Specimen*).

Name of ¼ acre block. *Sub-division,* *Division.*

Name of line.	Distance from line A.	Offsets to the left.	Serial number of tree.	Remarks.
A . B .	3 feet.	7 feet	1	
	5	3	2	
	8	5	...	Miscellaneous large 1st class tree.
	12	12	3	
	18	14½	4	
	20	6	5	
	26	10	6	
	50	5	7	
	6	1	8	
A2. B2.	X	Y	9	

APPENDIX No. 2.

*Oudh Province Proper.**

Square miles.	Year.	Expenditure. A.	Expenditure. B.	Expenditure. Total.	Receipts.	Surplus.	Deficit.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
818	1864-65 ...	52,797	27,154	79,951	54,634		25,317
818	1865-66 ...	38 886	19,883	58,769	1,19,969	61,200	
818	1866-67 ...	38,001	21,571	59,572	2,01,246	1,41,674	
818	1867-68 ...	70,569	23,065	93,634	66,453	...	27,181
818	1868-69 ...	59,566	29,615	89,181	1,31,822	42,641	
818		2,59,819	1,21,288	3,81,107	5,74,124	2,45,515	
						52,498	52,498
						1,93,017	
Average of 5 years,		51,964	24,257	76,221	1,14,825	38,604	
Average per square mile ...			...	...	140 gross,	47 net.	
818	1869-70 ...	63,180	42,090	1,05,270	1,06,822	1,552	
818	1870-71 ...	52,872	47,119	99,991	60,181	...	39,810
818	1871-72 ...	79,412	47,269	1,26,681	1,37,767	11,086	
818	1872-73 ...	87,201	56,219	1,43,420	2,96,258	1,52,838	
818	1873-74 ...	1,51,178	48,256	1,99,434	3,03,181	1,03,747	
		4,33,843	2,40,953	6,74,796	9,04 209	2,69,223	
						39,810	
						2,29,413	
Average of 5 years.		86,768	48,191	1,34,959	1,80,842	45,883	
Average per square mile ...			...	...	221 gross,	56 net.	
818	1874-75 ...	1,58,161	46,666	2,04,827	2,77,411	72,584	
818	1875-76 ...	1,48,950	49,465	1,98,415	2,94,658	96,243	
818	1876-77 ...	1,42,247	63,072	2,05,319	3,35,450	1,30,131	
818	1877-78 ...‡	1,30,047	55,254	1,85,301	3,67,004	1,81,709	
818	1878-79 ...‡	1,53,179	59,654	2,12,833	2,67,416	54,583	
818		7,32,584	2,74,111	10,06,695	15,41,939	5,35,244	
Average of 5 years		1,46,517	54,822	2,01,339	3,08,388	1,07,049	
Average per square mile			...	...	377 gross	130 net	
†818	1879-80 ...‡	1,41,933	58,098	2,00,091	3,39,975	1,39,884	
Average per square mile			...	...	415 gross	171 net	

* Money figures, expenditure and receipt, 1864 to 1877, taken from Inspector-General's Review, 1878-79, pp. 30-33.

† I have taken 818 as the average of all the years, for though we have lately lost in the 8th section Bahraich and in the 4th Gonda sections, we have gained about the same amount in Bhira.

‡ Deducting figures for Gorakhpur and Bareilly.

APPENDIX No. 3A.

Money figures taken from Inspector-General's review on all Forests, 1878-79, page 30-33 N.-W. Provinces and Oudh.

Year.	Expenditure.			Receipts.	Surplus.
	A.	B.	Total.		
	Rs.	Rs.	Rs.	Rs	Rs.
1874-75	8,75,039	1,85,633	10,60,672	13,63,358	3,0 ,686
1875-76	5,40,335	1,95,994	7,36,329	12,64,356	5,28,027
1876-77	6,50,002	2,10,247	8,60,249	11,50,671	2,90,42[illegible]
1877-78	5,09,798	2,18,427	7,28,225	12,03,108	4,74,883
1878-79	5,72,085	2,37,892	8,09,977	11,26,755	3,16,778
3,360 square miles, 5 years,	31,47,259	10,48,193	41,95,452	61,08,248	19,12,796
Average for one year ...	6,29,452	2,09,638	8,39,090	12,21,650	3,82,560
Average per square mile...	...	...	...	393 gross.	114 net.

APPENDIX No. 3B.

Year.	Square miles.	Province.	Expenditure.			Receipts.	Surplus.
			A.	B.	Total.		
			Rs.	Rs.	Rs.	Rs.	Rs.
1877-78,	8,510	Bengal ...	1,46,857	1,14,354	2,61,211	4,26,228	1,65,017
	Average per square mile	...	...	...	...	50 gross.	19 net.
1878-79,	19,604	Central Provinces..	2,36,029	1,57,686	2,93,715	8,52,862	5,59,147
	Average per square mile.	...	...	...	...	43½ gross.	29 net.
1878-79,	5,585	Assam ...	64,519	61,508	1,26,027	1,61,779	35,752
	Average per square mile.	...	...	...	...	29 gross.	6½ net.

APPENDIX No. 4.

FOREST DEPARTMENT, N.-W PROVINCES AND OUDH, OUDH CIRCLE.

List of buildings for 1879-80.

Number.	Names.	Property of	Rent when occupied per month.	Amount paid by officer during the year.
				Rs a p.
1	Head-quarters, Lakhimpur office and rest-house,	Forest Department,	Rs. 25 by officer, and Rs. 25 by office.	98 5 3
2	Ditto Bahraich ditto ...	Ditto.	Rs, 30 by officer and Rs. 20 by office.	*62 0 4
3	Timber depôt Bahramghat ,, ...	Ditto.		
4	Ditto ditto ,, ...	Ditto.		
5	Forest, 1st class, Kheri Dudua ,, ...	Ditto.		
6	Ditto, ditto, Suthiana ,, ...	Ditto.		
7	Ditto, ditto, Fort Gauri Shah ,, ...	Ditto.		
8	Ditto, ditto, Shitalea Ghat ,, ...	Ditto.		
9	Ditto, ditto, Biltryan ,, ...	Ditto.		
10	Ditto, Bhira, Gola ,, ...	Ditto.		
11	Ditto, Bahraich, Nishangara ,, ...	Ditto.		
12	Forest, 2nd class, ditto, ditto ,, ...	Ditto.		
13	Ditto, ditto, Sajauli ,, ...	Ditto.		
14	Ditto, ditto, Motipur ,, ...	Ditto.		
15	Ditto, ditto, Charda ,, ...	Ditto.		
16	Ditto, ditto, Kakarduri ,, ...	Ditto.		
17	Ditto, ditto, Bhinga ,, ...	Ditto.		
18	Ditto, Gorakhpur Chauk ,, ...	Ditto.		
19	Ditto, ditto, Ramgarh ,, ...	Ditto.		
20	Ditto, ditto, Sukhui ,, ...	Ditto.		
21	Forest, 3rd class, ditto Nagwa ,, ...	Ditto.		
22	Ditto, Gonda, Bhagwanpur ,, ...	Ditto.		
23	Ditto, Bahraich, Motipur ,, ...	Ditto.		
			Total ...	160 5 7

* *Note.*— Rs. 30 extra received in 1880-81 for past year.

E. WOOD, CAPTAIN,

Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

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SCHOOL CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION
FOR THE YEAR 1879-80.

By Captain F. Bailey, R.E., Conservator of Forests, School Circle.

BENGAL SECRETARIAT LIBRARY

CHAPTER I.

Summary of Administration during the year.

1. During the year the Circle has lost the services of the undermentioned officers:—Major Jarrett, V. C., Deputy Conservator, has been transferred to the Central Provinces; Mr. Bagshawe, Deputy Conservator, has been sent to act as Conservator of Forests in Berár, and Mr. Rind, Assistant Conservator, has been sent on special duty to Beluchistán. To replace these officers, Dr. Warth, Officiating Assistant Conservator, was appointed to the Department, and joined this Circle in December last; and the staff of officers now available for the management of the forests stood thus at the close of the year:—

Mr. O'Callaghan, Deputy Conservator, in charge of the Dún Division.

Mr. Smythies, Assistant Conservator, in charge of the Jaunsár and Tons Divisions.

Dr. Warth, Officiating Assistant Conservator, in charge of the Saháranpur Division.

Mr. Murray, Sub-Assistant Conservator, attached to the Jaunsár Division.

In his memorandum of the 1st September, 1877, on the formation of a Central Forest School, the Inspector-General of Forests proposed that the staff at the disposal of the Conservator should consist of seven officers, which number, together with three officers attached to the Forest Survey Department, would enable him to carry out the programme therein sketched. The Bhágirathi forests, however, were not made over to this Circle, and the number of officers should be—

For the management of the forests, for giving theoretical instruction, and for work at head-quarters, in the museum, &c	6
For the Forest Survey, and to give instruction in surveying ...	3
Total ...	9

The present staff consists of four officers for the management of the forests (two of them have lately joined the Department), and two attached to the Forest Survey Department, so that the actual number is three officers short of the full complement; and the officers who have lately joined cannot at present be utilized as instructors, so that it will be seen that the provision made for the effective management of the forests, and for the instruction of probationers and apprentices, is most inadequate.

Formation of the Tons Division.

2. The forests of the Jaunsár Division were scattered over such a large extent of country that their management by one officer, who was also charged with the instruction of probationers and apprentices, was no longer possible. The leased forests of Tiri-Garhwál and of Bashahr, in the

valleys of the Tons, Rupin and Pábar, together with the Khunigálh and Deogár Forests of Jaunsár Báwar, were formed into a separate division called the Tons Division.

Control of the valuation surveys and working plans in progress in these Provinces vested in the Conservator of the School Circle.

3. The control of the valuation surveys and working plans in progress in these Provinces has been vested in the Conservator of the School Circle; and Mr. Dansey, Assistant Conservator, who has been employed in the Central Circle, has been transferred to this Circle. Mr. Dansey's work forms an excellent school of instruction for the probationers and apprentices. All the valuation survey work in progress in this Circle has been placed under Mr. Dansey's control.

Forest rules.

4. Rules under sections 25 (i) and 75, and a declaration under section 45 of the Indian Forest Act (1878) were issued on the 28th February, and at the same time powers were conferred on the Conservator and his officers under sections 67 and 71 of the same Act. Powers to seize arms under Section 13 of the Indian Arms Act were also conferred on these officers. Rules under Section 41 have not yet been issued. Rules for the Tiri-Garhwál forests have not yet been approved.

Registers of reserves.

5. The registers of reserves are not yet completed; but the work is being pushed on.

Accounts.

6. The accounts are now all submitted by divisional officers direct to the Comptroller-General, and the system works admirably.

Programme of work.

7. At the beginning of each year a programme of work is submitted to the Conservator by each divisional officer, and work is regulated in accordance with the orders passed in each case by the Conservator.

Legal documents.

8. Endeavours are being made to carry out strictly the orders of Government on the subject of leases and contracts, and the Conservator is engaged in drawing up a set of instructions for the guidance of his officers, and of model deeds to which the sanction of Government will in each case be obtained.

Buildings and institutions at head-quarters.

9. The Public Works Department has not yet completed the repairs to the new buildings, but it is hoped that they will shortly be handed over. A large collection of specimens of wood has been received for the museum from the Inspector-General of Forests, and the commencement of a geological collection has been made by the arrival of a consignment of specimens collected by Dr. Warth, when he was employed in the salt mines, and by local additions made by him. Herbarium and other collections are being made by all officers, and several valuable additions have been made by presents of dried plants received from Mr. Gamble, Conservator of Forests in Bengal: Mr. Duthie, Superintendent of the Government Botanical Gardens at Saháranpur has kindly consented to give advice and assistance regarding the arrangement of the specimens Some additions have been made to the library. A small chemical laboratory, which was used by Dr. Warth at the salt mines, has been received and will shortly be set up. Several sets of instruments for conducting meteorological observations have been received from the Meteorological Reporter to the Government of India, and they will be set up under instructions received from him. A thermometer shed has been erected. A shed has also been erected for the protection of timber of various kinds, which will be kept in store both for use in the new buildings and for experiments.

Experiments regarding the solid contents of stacked fuel, and the weight of fuel.

10. Under instructions from the Conservator, Mr. Smythies undertook experiments to determine the relation between stacked and solid fuel, and he arrived at the following results, viz., that 146 cubic feet of stacked fir fuel were equal to 100 cubic feet of solid fuel. The experiment will be continued. Endeavours are being made to ascertain

what stacked fuel loses in weight when exposed to the weather, and when stacked under cover; the results will be reported.

Consignment of timber, &c., to England.

11. A consignment of timber, consisting of 23 kinds, was sent from the Dehra Dún Division to Messrs. Churchill and Sim, and a consignment of 9 kinds was sent to the same firm from the Jaunsár Division. Of those sent from Dehra Dún two only were mentioned favorably, *viz.*, Tún (*Cedrela Toona*) and Thanella (*Gardenia turgida*). No report has as yet been received on the specimens sent from Jaunsár. A consignment of specimens of 23 kinds of timber was also sent from the Dehra Dún Division to Messrs. Ramsome and Co. for experimental purposes, but no report has yet been received from them.

Collection for the Berlin Fishery Exhibition, and specimens of wood, bark leaves and soil for the French Forest School.

12. A small collection of fish and fishery apparatus was made by Dr. Warth, and despatched to the Berlin Fishery Exhibition, and collections of wood, bark and leaves of various kinds of trees, and of the soil in which they grow, are being made for the French Forest School at Nancy.

Probationers and apprentices.

13. During the year the following probationers and apprentices have entered the Forest School:—

	Probationers.	*Apprentices.*	
From these Provinces...	5	0	
From the Panjab ...	0	1	Ranger apprentices.
From Berár ...	0	1	Ranger apprentices.
Total ...	5	2	

All the above are "Natives of India" under the definition given in the foot note to paragraph 3 of Government of India Circular No. 10F. of the 10th June, 1880. Mr. Hobson remained three months, when, as his services were urgently needed in Bengal, he was sent for duty in that Province. The probationers and apprentices have all been fully employed in the forests, some of them having been placed under Mr. Dansey's orders on valuation survey work. They have all been highly spoken of by the officers under whom they have served, and they will probably all turn out well. Applications for the admission of apprentices have been received from the Conservator of the Central Circle, and from the Conservators of Assam and Sind, as well as from the Foreign Minister to the State of Pattiala. It is hoped that an increase to the staff of officers may shortly admit of the number of apprentices being increased by the admission of some of these men, and by the award of the eight scholarships which are now in the hands of the Director of the Forest School. With the present inadequate staff of officers it would be found exceedingly difficult to instruct a larger number than are at present at the Forest School.

Tour of the Conservator.

14. All the Forest Divisions have been visited by the Conservator, who also, with the sanction of Government, proceeded to Simla in the month of September to consult with the Inspector-General of Forests.

CHAPTER II.

Reserved Forests.

Area and Boundaries.

Dehra Dun Division.

Area.

15. There has been no change in the actual area, but the correct areas of the reserves have now been given by the Superintendent of Forest Surveys, and the adoption of his figures causes a nominal increase of 1,126 acres.

Boundaries.

16. The boundary lines and marks are in good order. The boundary lines of the following forests were cleared at a cost of Rs. 375 :—

Ambári.	Chándpur.
Dholkot.	Rámpur Mandi.

Western Siwálik.

The length of the lines is 50 miles, and the cost was therefore Rs. 7-8-0 per mile.

Numbering of the compartments at Bulawála, and naming of the roads.

17. The compartments of the Bulawála Block have been numbered, and metal tickets with painted numbers have been attached to trees at the corners of each compartment. The roads running between and around the compartments have been named.

Valuation surveys.

18. As the services of a small valuation survey party, which had been working in the Tons Division were available during the time that work in that Division had to be closed on account of the severity of the climate, it was employed in enumerating the trees in those compartments of the Bulawála Block, which had been thinned previous to the Inspector-General's visit in 1878. The results of the enumeration are given in Appendix A, of which the following is an abstract.

Number of compartment	Area in acres.	Number of trees of all kinds.	Average number of trees per acre.
13	320	10,604	33
15	3 0	9,925	31
17	320	10,058	31
19	320	7,729	24
21	320	9,930	31
23	320	10,644	33
Totals and average	1,920	58,890	31

Sample plots.

19. The ticketing and measurement of the sál trees in the fenced sample plots at one corner of compartment No. 14 of the Bulawála Block were completed. Twenty-five selected sál trees in each of the compartments above enumerated, and 25 in each of the untouched compartments opposite to them, were also ticketed and measured. The results were recorded, and measurements will be repeated yearly so as to obtain a record of the annual rate of growth.

Saharanpur Division.

Areas.

20. The actual area remains the same as last year, but the correct figures having now been given by the Superintendent of Forest Surveys there is an apparent increase of 1,434 acres.

A proposal has been made to sell the Sháhmansur block (area about 1,040 acres), which is chiefly used as pasture land.

Boundaries.

21. The lines and marks are in good order. Thirteen cast-iron notice boards bearing the words *Closed Government Forest* in English and Hindustáni have been erected around the Lakarkot Forest, to warn the public that it is closed.

Division into blocks and compartments.

22. The Lakarkot Forest has been divided into the Lakarkot Block with 11 compartments, and Gunjarban Block with 7 compartments; the Kálushahid Block has been divided into 5 compartments.

Jaunsar Division.

Areas.

23. The Jaunpur Forest, in Tiri Garhwál, which at the close of last year remained a portion of the Central Circle, was transferred to this Circle. Its area is estimated to be about 2 square miles (1,280 acres).

Boundaries.

24. The boundary marks of the forests in British territory are in good order, Rs. 62 having been expended in repairing pillars. The demarcation of the leased forests is in progress.

The forests of the Jaunsár Division have now been divided into three ranges, which are—

	Ranges.			Forests.	Blocks.
1.	Head-quarters	...	...	7	17
2.	Deoban	...	...	5	42
3.	Báwar	...	...	4	32

Valuation surveys.

25. Before the year 1879-80 the following work connected with valuation surveys had been accomplished. The compartments of the Mohna, Kanjátra, Thona, Kutniár and Asméri Blocks of the Deoban and Lokandi Forests, Deoban Range, and those of a portion of the Dháragádh Forest, were described by Mr. E. P. Dansey; but no enumeration of the trees was made. During 1879-80 a valuation of the Hajáwa Block of the Ekra Forest was made by Mr. J. C. Murray, and the results of his work will be found in Appendix B. The block is found to contain 24,627 Deodar, Fir, Pine and Oak trees over 2 feet 4 inches in girth, and their cubic contents are estimated to be 2,461,590 cubic feet.

Rate of growth and reducing factor.

26. Records of ring counting and of measurement to ascertain the reducing factor for various species of trees in different localities are being made.

Tons Division.

Area.

27. The forests leased from the Thákurs of Raiengarh and Dádi, estimated areas 2,560 and 960 acres respectively, were added during the year.

Boundaries.

28. The boundary marks of the forests in British territory are in good order, and the demarcation of the leased forests in Tiri-Garhwál and Raiengarh is in progress, and will be gradually effected. The boundary of the Lambatách forest near Thanwár, reported last year as unsettled, has now been satisfactorily adjusted. No demarcation has as yet been attempted in Bashahr and Dádi. The forests of this division have not yet been apportioned into ranges.

Valuation surveys.

29. The valuation of the blocks of the Deota Forest had been nearly accomplished before 1879-80, and the valuation of the Chír (*P. longifolia*) forests on the left bank of the Tons from a point one mile below the junction of the Tons and Rupin rivers to Chátra was completed last year. During this year the work in Deota was completed by Mr. A. E. Lowrie, who also valued the Bámsu Forest and part of Kotigádh, and who is now working in Surárs. The results of all the work done up to date in Deota, Bámsu and Kotigádh will be found in Appendices C. and D., but it may be here said that in Deota the number of green Deodar trees over 3 feet in girth, including unsound and inaccessible trees, turned out to be 62,520. The total number of Deodár trees of over 3 feet in girth found in Bámsu and part of Kotigádh was 29,399. The results of the valuation of the Tons Chír forests are recorded in Appendix E.

Rate of growth and reducing factor.

30. Records of ring-counting and of measurements to ascertain the reducing factor for Deodár trees in different localities are being made.

Summary for the Circle.

Areas.

31. The correct areas of the Dehra Dún and Saháranpur Forests have now been given by the Superintendent of Forest Surveys, and in consequence of the adoption of his figures there is an apparent increase of area in these divisions of 2,560 acres. The Jaunpur Forests in the valley of the Jumna (area about 1,280 acres) have been taken over from the Central Circle, and the forests of the Thákurs of Raiengarh and Dádi, areas about 2,560 and 960 acres respectively, have been leased. The total increase in area is therefore 7,360 acres.

It has been proposed to sell the Shahmansur Block in the Saháranpur Division.

Boundaries and division into ranges, forests, blocks and compartments.

32. The boundary lines and marks of the forests in British territory are in good order. Fifty miles of lines were cleared in Dehra Dún at a cost of Rs. 375 or Rs. 7-8-0 per mile, and Rs. 62 were spent in repairing pillars in Jaunsár. The demarcation of the leased forests is in progress ; but it has not yet been commenced in Bashahr or Dádi. The unsettled boundary of the Lambatách forest near Thanwár, has been adjusted. The compartments of the Bulawála Block in Dehra Dún have been numbered, and tickets with numbers have been attached to trees at their corners ; the roads between and around the compartments have been named. The Lakarkot Forest in Saháranpur has been divided into blocks and compartments, and notice boards bearing the words *Closed Government Forest* in English and Hindustani have been erected round it ; the Kálushahid block has also been divided into compartments. The forests of the Jaunsár Division have been divided into three ranges, comprising 16 forests and 91 blocks.

Valuation surveys.

33. In Dehra Dún the six compartments of Bulawála Block, which had been thinned previous to the Inspector-General's visit in 1878, were valued ; and it turned out that the average number of trees of all kinds left standing is 31 per acre. In Jaunsár the Hajáwa Block of the Ekra Forest was valued, and it was found to contain 24,627 trees (Deodar, Fir, Pine, and Oak) of and over 2 feet 4 inches in girth. In the Tons Division the valuation of the blocks of the Deota Forest, and of Bámsu and part of Kotigádh was completed. It was found that the Deota Forest contains 62,520 green Deodar trees of over 3 feet in girth, and that the Bámsu Forest (with part of Kotigádh) contains 29,399 similar trees. The results of all these surveys will be found in Appendices A., B., C., D. Appendix E. shows the result of last year's valuation of the Tons Chír forests.

The ticketing and measurement of the Sál trees in the fenced sample plots in Bulawála (Dehra Dún) were completed, and 25 Sál trees in each of the thinned compartments, and 25 in each of the untouched compartments opposite to them were also ticketed and measured. The results were recorded with a view to determine the annual rate of growth.

Records of ring-counting and of measurements to ascertain the reducing factor for various species of trees in various localities are being made in the Jaunsár and Tons Divisions. As all valuation survey work in this Circle will now be carried out in communication with Mr. Dansey, who is in charge of the Working Plan Division, it is hoped that greater regularity of procedure may be attained.

Protection and Improvement.

Dehra Dun Division.

Establishment.

34. The following establishment is sanctioned :—

	Monthly pay.	Yearly pay.
4 Foresters ...	Rs. 65	Rs. 780
32 Forest guards ...	„ 203	„ 2,436
Total	Rs. 268	3,216

This establishment was supplemented by the entertainment of temporary guards at a cost of Rs. 360.

Offences.

35. There were two prosecutions involving three persons, all of whom were convicted.

Roads.

36. The following fair weather cart roads, ten feet wide, were constructed :—

		Miles.	Expenditure. Rs.
1.	Part of road from Bulawála to Dehra, *viâ* Motronwála ...	2	
2.	From Asarori to Khajnáor	6	
3.	From Asarori westwards (the wild elephant track) ...	6	
4.	From Dehra-Hardwár road to Bulawála	5	
5.	Between compartments of Bulawála Block	16	
6.	Ditto ditto Balindawála Block ...	21	
	Total ...	56	1,314

The total cost of these roads, including expenditure in other years, was about Rs. 45 per mile. Many of them were freely used by exporters, and they have greatly facilitated the removal of produce, the inspection of the forests, and their protection from fire.

Buildings.

37. The Balindawála rest-house was improved, and has now cost Rs. 200. The Jhabrawála rest-house was also improved and has cost about Rs. 150; a third rest-house was commenced at Karwa Pání in the Asarori Block. The total expenditure was Rs. 361. It will probably be advisable to make one or two more substantial buildings.

Fires.

38. The area of which the protection from fire was undertaken was increased by the addition of the Balindawála Block, 6,512 acres, the Asarori Block, 4,717 acres, and of 26 acres in Tháno. The total area under protection is now 27,664 acres. Up to the date of this report 58 acres have been burnt in the following places, *viz* :—

Bulawála compartment 13, 10 acres (a compartment thinned under old system).
Ditto ditto 10, 48 „ (not thinned).

The area burnt has therefore been ·2 per cent. of the area of which the protection was attempted. The damage done has been very slight.

The cost of the year's operations has been Rs. 2,865, or Rs. 104 per 1,000 acres of the area actually protected. The rate for the previous year was Rs. 323 per 1,000 acres. Cattle are excluded from the forests which are protected from fire. Some of the fire lines in Bulawála and Balindawála are completely cleared lines of 60 feet in width, while others are cleared for a width of 10 feet only, the grass at the sides to a width of 25 feet being burnt off, and the trees on these side-strips being left standing. Some of the lines are as yet only 10 feet wide roads. There will probably be an opportunity of comparing the respective merits of the two first mentioned systems. Mr. O'Gallaghan thinks that the last named system will be found as efficacious as either of the former, but this appears unlikely. We have now as large an area under protection in Dehra Dún as we can afford to manage, and it is not proposed to extend the area during 1880-81.

Sowing and planting.

39. In July some Sál seed was sown in blanks near Thelwall's line in the Bulawála Block. The seed was sown in patches, 3 feet apart, the lines of patches being 15 feet apart and about 5 to 7 seeds being sown in each patch. In the same localities a number of Sál seedlings were transplanted from the forests into holes arranged as above described, and dug to a depth of 18 inches, each seedling being cut back at the top as it was planted. The following is an abstract of the work done :—

Bulawála Block.

Number of compartment	Number of seed patches.	Number of plants.
5 ...	544	...
7	1,133	240
9 ...	280	300
11 ...	1,615	206
13 ...	247	244
Total ...	3,829	990

It is said that on the date of this report only 106 seed patches contain living seedlings, and that only 175 planted seedlings are alive. But as it is known that many Sál seedlings die down to the ground during certain seasons, it is hoped that more than this number are really alive; they will be again examined directly after the rains. The work cost Rs. 232, and extends over about four acres, so that the cost per acre was about Rs. 58.

Thinnings at Bulawala.

40. As reported last year the system of thinning recommended by Mr. Brandis was adopted in compartments Nos. 22 and 24 of the Bulawála Block. The trees were ringed in the hot weather, and most of them died within a week The trees in compartment No 22 were bought as they stood by Mr. Scott of Mussooree; but when he began to take them out in the autumn, he found that they had suffered terribly from the borings of the carpenter bee (*xylocopa*), specimens of which in various stages have been secured. This unfortunate occurrence materially affected the revenue derived from the ringed trees, for although merchants do not appear to object to timber of the size known as "tors" when thus bored, the larger classes (of which the girdled trees chiefly consisted) seem almost unsaleable in that condition.

It is plain that the operation must not be repeated; but the difficulty will be overcome by marking the trees in the autumn, and allowing purchasers to fell and remove them at once. The system of thinning now adopted will be very beneficial to the forest, and the compartments thus treated, though not so regular looking as those previously thinned, are in a much more forward condition than the latter, and are therefore much more valuable as they stand, since none of the young growth has been removed from them, and they contain a fairly abundant crop of well-grown saplings, while the better overhead cover allows less grass to grow up. When comparing the two methods of treatment, the following should also be noted. The cost of thinning and converting six compartments under the old system of work by departmental agency was Rs. 16,339, and the amount realized by the thinnings has been Rs. 31,669. The wood remaining in them may sell for Rs. 3,000, and if it realizes that amount, the net profit per acre will have been Rs. 6-7-0. The cost of thinning two compartments under the new system was Rs. 210, and the sums realized up to the end of the year amounted to Rs. 12,000. The saleable wood left is probably worth Rs. 2,000, and if this sum is realized the net profit per acre will be Rs. 21-8-0.

Forest garden.

41. An area of about five acres on the south side of the road leading from Dehra to Chakráta, and about two miles from Dehra, has been taken up as a garden on a permanent lease at Rs. 2-4-0 per bigha, and an establishment of two men on Rs. 10-8-0 per mensem has been sanctioned. The garden was surrounded by a bank and ditch, and after it had been laid out into plots by roads, seeds were sown in beds as follows:—

Seeds of trees that are not natives of this part of India.

Botanical names.	English or Vernacular names.	Remarks.
Brabejum stellatifolium	Caffre chestnut or wild almond,	Not germinated.
Eucalyptus rostrata	Australian gum	A few germinated.
Eucalyptus goniocalyx	Australian gum	Ditto.
Anogeissus pendula	Dhaukra	Not germinated.
Ehretia lævis (?).	Tambolia	A few germinated.
(?.)	Salipa	Not germinated.
Elcreosossa vernicia	Chinese varnish	Germinated fairly.
Bauhinia sp.	(?)	Not germinated.
Excœcaria sebifera	Tallow tree	A few germinated.

Seeds of trees which are natives of this part of India.

Botanical names.	English or Vernacular names.	Remarks.
Quercus annulata	Inai oak	A few germinated.
Cupressus torulosa	Cypress	Ditto.
Cedrus Deodara	Deodar	Germinated fairly.
Adina cordifolia	Haldu	Not germinated.
Dalbergia Sissoo	Shisham	Germinated poorly.
Cedrela Toona	Tún	Not germinated.
Acacia Catechu	Khair	A few germinated.
Anogeissus latifolia	Bákli	Not germinated.
Cassia Fistula	Amaltás	A few germinated.
Albizzia odoratissima	Siris	Germinated fairly.
Albizzia procera	Sirsi	Ditto.
Terminalia tomentosa	Sein	Not germinated.
Melia Azedarach	Bakain	Ditto.

The following plants received from the Botanical Gardens at Saháranpur were put in :—

Botanical names.	English or Vernacular names.	No. of plants.	
		Alive.	Dead.
Ceratonia siliqua	Carob	27	23
Eucalyptus goniocalyx	Australian gums ...	20	*Nil.*
Eucalyptus robusta		1	9
Eucalyptus rostrata		34	16
Eucalyptus siderophloia		19	1
Olea sp.	Italian olive	12	*Nil.*
Prosopis glandulosa	Mesquit bean	46	4
Swietenia mahogani	Mahogany	10	2
Sterculia rupestris	Bottle tree	30	*Nil.*
Sterculia tricosiphon	(?.)	19	1
Castanea vulgaris	Italian chestnut grafts ...	42	24

Several thousand mulberry cuttings of *M. multicaulis* and 100 of *M. alba* are doing very well.

The success gained has certainly been small. That it has not been greater is probably due partly to the want of shade in the garden, partly to deficient irrigation, partly to white ants, and partly to the sowing of bad seed. An endeavour will be made to give more artificial shade next year, and more care will be taken with the selection of the seed. The garden was established close to the canal, but owing to its having contained an insufficient supply of water during a part of the hot season, the Executive Engineer was not able to permit water to be taken more tham twice a week, and this did not prove sufficient to keep the plants alive. It is hoped that an arrangement may be made next season to obtain water daily during the hot season.

Saharanpur Division.

Establishment.

42. The following establishment is sanctioned :—

		Monthly pay.	Yearly pay.
1.	Ranger ...	Rs. 50 ...	Rs. 600
2.	Foresters ...	„ 45 ...	„ 540
4.	Forest guards ...	„ 41 ...	„ 492
	Total ...	Rs. 136 ...	Rs. 1,632

This establishment is quite insufficient, and it was assisted by the entertainment of temporary guards at a cost of Rs. 3,867. The greater part of the temporary establishment must be entertained each year, and it should be made "permanent." Major Jarrett thinks that if this could be done, and if the men had a pension to look forward to, better and more honest work would be obtained from them.

Offences.

43. There were 10 prosecutions involving 15 persons. Convictions were obtained in 7 cases involving 9 persons.

Roads.

44. 22½ miles of road in and around the Lakarkot Forest were either entirely newly made, or widened and improved at a cost of Rs. 307, or at Rs. 13-10-0 per mile; 10 miles of road were repaired at a cost of Rs. 60 or at Rs. 6 per mile.

Buildings.

45. A sum of Rs. 400 was contributed towards the repair of the Khára (Canal Department) rest-house, which has been undertaken by that department. This house will be very useful as a shelter for the divisional officer when inspecting the western portion of his division. Rs. 47 were spent on petty repairs to the Beribára rest-house.

Fires.

46. The area to be protected from fire was increased by the addition of the Gunjarban Block, area 4,000 acres, the Kálushahid Block, area 1,500 acres, and the Daula Block, area 1,000 acres, and the total area is now 11,000 acres.

Up to the date of this report 15 acres have been burnt in the following places, viz.,—

In Lakarkot ...	...	...	1 acre.
In Kálushahid	...	...	14 acres.

The area burnt has therefore been ·1 per cent. of the area of which the protection was attempted. The damage done has been small. The cost of the year's operations has been Rs. 1,073 or Rs. 98 per 1,000 acres of the area actually protected. The rate for the previous year was Rs. 147 per 1,000 acres. Cattle are excluded from all the forests which are protected from fire. The outer fire lines are all cleared to a width of 60 feet, which in Major Jarrett's opinion is not a sufficient width to secure the forests in case a storm of wind should arise when the fires are burning near the forests. The question of an increase to their width will be considered. The inner lines are similar to those described in the report on the Dún Forests, having a cleared road 10 feet wide down the centre, and strips of 25 feet wide, with the trees standing on them burnt on each side. Major Jarrett disapproves of this kind of fire line; as he says that the grass at the sides of the road being under shade, takes long to dry, and on this account cannot be burnt sufficiently early in the year; while the trees afford shade to travellers, who are induced to rest under them and smoke to the great danger of the forest. Further experience will show whether lines of this kind are effectual.

Sowing of Sál seed.

47. In June Major Jarrett sowed Sál seed in about four acres of compartments Nos. 1 and 6 of the Lakarkot Block. The seeds were sown in patches, each of which received four seeds. The patches were in lines 30 feet apart, and they were 3 feet apart in the lines. The ground was cleared by the stroke of a shovel, and the seeds were covered with the earth that had been thus raised; and each patch was then marked by a stake. There were altogether 8,050 patches (7,000 in compartment No. 1 and 1,050 in compartment No. 6) in which 2,035 seedlings were counted at the end of March; but this number does not include those which germinated, and of which the stems died down in the cold weather. This dying down of the stems does not appear to be unusual in the case of Sál seedlings, and there is reason to hope that a much larger proportion will hereafter be found alive. The seedlings will be recounted as soon as possible after the rains.

48. At the lower end of compartment No. 10 of Lakarkot, about 20 acres were sown with Khair seed during July. The method of sowing was that above described. At the close of the year 154,629 living plants were counted. The expenditure was Rs. 31, which, with Rs. 13 spent on the plantation at Shahmansur, gives a total expenditure of Rs. 44 on planting work. It should have been charged to A.VIII *y*.

Sowing of Khair seed (A. catechu).

49. Creepers were cut in all that portion of the Lakarkot Block, which lies to the east of the Andheri Rau, and work was commenced in that portion of Gunjarban which lies north of the Ganges-Jumna road. The expenditure was Rs. 388.

Creeper cutting.

50. With a view to improving the growth of the young Sál trees a number of hollow, crooked and overspreading Sál trees were girdled, and a number of dry trees were marked for sale in compartments Nos. 1, 2, 3, 4, 5, of Lakarkot. The total number of trees girdled and of dry trees marked was 2,767. The borer, however, attacked all the girdled trees, and the operation must not be repeated (see remarks in report on Dehra Dún).

Thinning.

Jaunsar Division.

51. The following establishment is sanctioned :—

Establishment.

		Monthly pay. Rs.	*Yearly pay.* Rs.
4	Foresters	85	1,020
14	Forest Guards	111	1,332
	Total ...	196	2,352

This establishment was supplemented by a temporary one costing Rs. 1,248.

52. 40 cases, involving 101 persons, were taken into Court, and convictions were obtained in 38 cases, involving 80 persons. A case against 20 persons for cultivating ground within the forest boundary was dismissed.

Offences.

53. The following roads were made and repaired at the cost stated against each :—

Roads and bridges.

	Rs.
Chakráta-Tons road repaired	1,517
New inspection paths in Deoban Forest	123
Other roads and paths repaired and miscellaneous charges,	244
Total ...	1,884

The inspection paths cost from Rs. 33 to Rs. 40 per mile, and they should be made in all forests where they do not at present exist.

54. The following sums were spent on buildings :—

Buildings.

	Rs.	Rs.
Repairs and additions to Deoban bungalow ...	360	
Forester's chauki at Korwa	61	
Miscellaneous repairs to other buildings ...	233	654 A.VII.b.
New fuel shed at Chakráta		3,700 A.I.b.
		4,354

The fuel shed will be gradually paid for by the Commissariat Department by means of an enhanced rate on the fuel.

55. The area under protection was increased by the addition of the Jaunpur forests, area 1,280 acres, and it now amounts to 33,966 acres. Up to the date of this report the following areas have been burnt, viz.,

Fires.

Forest.	*Block.*	*Acres.*
Karámba	Majbira	500
Dháragádh	Lokár	640
Deoban ... ... / Konain	Thona	6

The damage done was not very serious, the areas burnt being chiefly blank grassy slopes.

The total area burnt has therefore been 3·4 per cent. of the area of which the protection was attempted. A new fire line was made in the Kanjátra Block of the Deoban Forest, length 3 miles, at a cost of Rs. 106.

In treating of the total cost of the operations to protect the forests from fire, it is necessary to speak of the Jaunsár and Tons Divisions together, as the two having formed one division until December, much of the work done in the Tons Division has been paid for in the accounts of the Jaunsár Division. The total cost, including new fire lines, was Rs. 1,373, or Rs. 24 per 1,000 acres of area actually protected. The figures for the previous year were Rs. 19 per 1,000 acres. The areas can at present be given approximately only.

Closure of forests against grazing.

56. The following additional areas of 2nd class forests have been closed during the year :—

Forest.	*Block.*	*Acres.*
Lokandi ...	Part of Kophti	250
Deoban	Kanjátra	665
Konain	Part of Bájamára	200
Ekta	Part of Hajáwa	400
Karámba ...	Karámba	1,920
		3,435

The total area from which cattle, sheep and goats are excluded is now 15,704 acres.

They are all strictly closed against grazing with the following exceptions :—

(*a*). *Máikángra*, where the animals belonging to the fuel carriers are allowed to graze in the rocky portion near the road.

(*b*). *Kanjátra*, where the sheep and goats of Jádi village are allowed to graze for the year 1880.

(*c*). *Konain*, where horned cattle (only) are allowed to graze on the southern slope of the first class forest above and below the road. It may here be mentioned that from a return prepared in November last it is seen that the total number of sheep and goats belonging to the pargana of Jaunsár Báwar which graze in the Government forest is 18,638.

The areas protected from grazing are also protected from fire. They form part of the area shown in form 45, and no felling or lopping is allowed in them without the permission of the divisional officer.

Planting and sowing.

57. *Lokandi Forest, Bodiar Block.*—During the year about 6,800 Déodar plants five years old, were put out in the forest; yearling seedlings were bedded out in the garden, and new nursery beds were prepared and sown.

The following extracts from the plantation journal are given :—

"Planting out in the forest.

"The plants in the nursery lines are now five years old, and it is quite impossible to extract them, without damaging the roots.

"One plant with a tap-root going straight down was dug out at a depth of four feet; at this point the root broke off, leaving probably two feet in the ground * * *. Most of the plants taken up had thick roots broken off at two feet from the surface of the ground, and it remains to be seen whether this injures the plant."

Plants will not in future be left for so long a time in the nursery lines. A few Moru oak plants were put out on the western slope of Remuwa compartment.

"*Nursery beds.*—A hard bottom of stones and gravel well beaten down like a lawn tennis court was formed for all the beds inside the garden ; fine earth was spead over these hard bottoms to a depth of 8 or 9 inches, and the young plants were put out 3 inches apart in lines 12 inches apart. The number put out in the garden was 2,842 ; the remainder, 1,744 in number, were put out into beds without hard bottoms in Gánwa, below the path."

These young plants were looking remarkably well in May, 1880

"Sowing new beds in the nursery.

"There was a great failure of seed in all kinds of coniferous trees this year, and with some difficulty three seers of Deodar seed were collected. Out of this quantity about three pounds were sown in beds very thickly so as to allow for bad seed."

The seed was so bad that not one-half has germinated, and the plants that have come up do not look at all healthy.

Sowing in patches.

Owing to the scarcity of seed only 1,600 patches were dug and sown in December. Mr. Smythies remarks that the experience gained in Bodiar shows conclusively that November and December are the only months in which patch sowing should be attempted, and that in his opinion the planting out of young, strong and healthy nursery plants may after all be the most effective system of covering the bare slopes.

Konain Forest.—About four seers of Deoadr seed were sown on Chauri Dhár to fill up blanks in former sowings.

The cost of the work at Bodiar and Konain was Rs. 433.

Deoban Forest, Deothát Nursery.—The young Deodar seedlings were put out into nursery lines on a similar system to that employed in Bodiar. The Spruce and Blue Pine sown in November, 1878, and which up to the date of the last report had failed to gerininate, appeared above ground as soon as the rains set in, and at the present time there are numerous young plants of both kinds in the original seed lines; the Blue Pine especially are looking very well. The non-germination of these species until the setting in of the rains has not been previously recorded in any of the range books, and the experience gained in this instance should not be lost sight of. The number of Deodar seedlings transplanted into nursery lines was 8,297. The total expenditure in the nursery was Rs 141, of which Rs. 60 were the cost of making a wooden channel for the water supply.

Forest garden.

58. A suitable site has been selected within the limits of the Chakráta Cantonment, and work will be commenced as soon as the final arrangements with the military authorities can be made.

Chakráta Cantonment.

59. Two blocks of forest have been made over to the Forest Department for management. They are protected from fire and closed against cattle, sheep and goats, but the cutting of grass is permitted. The young growth is coming on well in many places.

Landour Cantonments.

60. The plantations were visited in May by Mr. Bagshawe and Mr. Smythies. Their combined suggestions for the management of the forest were forwarded for the information of the Commandant, who reports that the following work has been done during the year.

612 plants (Deodar, Blue Pine, Cypress and Spruce Fir) were obtained from the Botanical Gardens, Mussooree, and planted out in the rains. They are doing well. Eight nursery beds were prepared and sown with Deodar seed, which, owing to its inferior quality, has not turned out well. A fire line, five miles in length, was made round a part of the outer boundary, and the area enclosed was protected from fire. The total expenditure was Rs. 600.

The funds for this work were provided by the Commandant.

Tons Division.

Establishment.

61. The following establishment is sanctioned :—

	Monthly pay.	*Yearly pay.*
	Rs.	Rs.
3 Foresters	70	840
14 Forest guards	112	1,344
Total ...	182	2,184

A temporary establishment on Rs. 1,224 was also allowed.

Offences.

62. There were three prosecutions, involving ten persons, all of whom were convicted.

Roads and bridges.

63. The following roads and bridges were made and repaired at the cost stated against each :—

	Rs.
Saiah-Tons road, widened and repaired	2,619
Chakráta-Tons road repaired	22
Khunigádh road repaired	121
Inspection paths, Deota forest	89
Miscellaneous repairs to roads and bridges	665
Total ...	3,516

Buildings.

64. The following sums were spent on buildings :—

	Rs.
Repairs of Maindrot hut	29
Other miscellaneous repairs	20
Total ...	49

Fires.

65. The area under protection during the previous year was increased by the addition of 2,963 acres in Deota and Lambatách, and it now amounts to 23,792 acres. Up to the date of this report the following areas have been burnt, *viz* :—

Forest.	*Block.*	*Acres.*
Khunigádh	Molta ...	5
Dátmir		50
Raiengarh		160
Deota and Lambatách		30

The damage done has been slight.

The total area burnt has therefore been one per cent. of the area of which protection was attempted. The following new inspection paths were made, the cost being charged to A.VIII.*f*. They were used as fire lines :—

Forest.	*Block.*	*Length.* Miles.	Chains.	*Cost.* Rs.
Khunigádh,	Hanol ... / Molta ... / Chátra ... / Khunigádh ...	12	0	460
Lambatách	...	16	36	383
Deota (including Bámsu and Surárs) and miscellaneous charges	...	42	25	1,221
	Total ...	70	61	2,064

The work at Lambatách includes the making of interior fire lines down the principal spurs in the manner suggested by Mr. Brandis. For the cost of the operations see report on the Jaunsár forests.

Closure of forest against grazing.

66. An area of 2,560 acres in Raiengarh has been added to that which was closed against grazing at the end of the previous year, and the total area from which cattle, sheep and goats are now excluded amounts to 19,832 acres.

The whole of this area is also protected from fire, and it forms part of that shown in form 45. No felling or lopping is allowed without the permission of the divisional officer.

Planting and sowing.

67. 3,191 patches were sown with Deodár seed in the Lambatách Forest at a cost of Rs. 3.

Ringing of Spruce and Silver Fir.

68. In the Latatách Forest 14,131 Spruce and Silver Fir trees and poles of above 6 inches in girth, as well as a large and unknown number of poles and saplings of smaller size, were ringed with the view of encouraging the growth of Deodar seedlings and saplings. This work was carried out chiefly under the personal supervision of the native forester, who received his orders from Mr. Rind, then in charge of the division. The ringing of Spruce and Silver Fir was recommended by the Inspector-General of Forests in his report of 1879, but the selection of the trees should have been carefully made by the divisional officer himself, with reference to their situation and to the young growth found below them. It is much feared that the work, which has apparently been done in a wholesale and unscientific manner, will not lead to any good result, and its continuance must be postponed until it can be done under proper professional supervision.

Summary for the Circle.

Establishment.

69. The following establishment is sanctioned :—

	Monthly pay. Rs.	*Yearly pay.* Rs.
1 Ranger	50	600
Rangers (unappropriated) ...	172	2,064
13 Foresters	265	3,180
64 Forest guards	467	5,604
Total 78 men	954	11,448

The above establishment being insufficient to carry out the collection of revenue and the improvement and protection of the forests, a temporary establishment costing Rs. 6,699 was sanctioned for the year. The greater part of this establishment must be entertained each year, and if it were made permanent, better and more honest work would be obtained from the men.

70. There were in all 55 cases taken into court, involving 129 persons. In 50 cases, involving 102 persons, convictions were obtained. The principal case in which a conviction was not obtained was one in which 20 men were charged with cultivating land without authority inside the forest boundary.

Offences.

Roads and bridges.

71. The following work was done during the year :—

Dehra Dún Division.

	Fair weather cart roads.	*Miles.*	*Cost.* Rs.
1.	Part of road from Bulawála to Dehra *viá* Mothronwála	2	
2.	From Asarori to Khajnáor	6	
3.	From Asarori westwards (the wild elephant track)	6	
4.	From Dehra-Hardwár road to Bulawála ...	5	
5.	Between compartments of Bulawála Block ...	16	
6.	Ditto ditto Balindawála Block ...	21	
	Total ...	56	1,314

The total cost of these roads (some of which were begun in 1878-79 and finished in 1880-81) has been Rs. 23-7-5 per mile.

Sahárnpur Division.

22½ miles of road in and around the Lakarkot forest were either entirely newly made or widened and improved at a cost of Rs. 307 or Rs. 13-10-0 per mile ; 10 miles of road were repaired at a cost of Rs. 60 or Rs. 6 per mile.

Total expenditure, Rs. 367.

Jaunsár Division.

	Rs.
Chakráta-Tons road repaired	1,517
New inspection paths, Deoban Forest	123
Other roads and paths repaired, and miscellaneous charges ..	244
Total ...	1,884

The inspection paths cost from Rs. 30 to Rs. 40 per mile, and they should be made in all forests where they do not at present exist.

Tons Division.

	Rs.
Saiah-Tons road widened and repaired	2,619
Chakráta-Tons road, repaired	22
Khunigádh road repaired	121
Inspection paths, Deota Forest	89
Miscellaneous repairs to roads and bridges	665
Total ...	3,516

The total expenditure was therefore Rs. 7,081.

Buildings.

72. The Balindawála and Jhabráwála rest-houses in Dehra Dún were improved, and a third rest-house was commenced at Karwa Páni, in the Asarori Block ; expenditure Rs. 361.

In Saháranpur, Rs. 400 were contributed towards the repair of the Khára canal chauki, and Rs. 47 were spent on repairs to the Beri-bára hut.

In Jaunsár the following sums were spent:—

	Rs.
Repairs and additions to Deoban bungalow	360
Forester's chauki at Korwa	61
Miscellaneous repairs to other buildings	233
	654(A.VII*b*.)

A new fuel shed was built at Chakráta at a cost of Rs. 3,700, which was charged to A.I.*b*, and the cost of which will be gradually recovered from the Commissariat Department. In the Tons Division Rs. 49 were expended on repairs to existing buildings.

In the Direction Division Rs. 26,060 were spent on the purchase and repair of the new buildings.

The total expenditure under A.VII.*b*. was Rs. 27,572.

Fires.

73. The area under protection during the previous year was increased by the addition of the following areas, *viz.*:—

	Acres.
Dehra Dún	11,255
Saháranpur	6,500
Jaunsár	1,280
Tons	2,963
Total ...	21,998

And the total area now under protection is 96,422 acres. Up to the date of this report the following areas have been burnt, *viz.*,—

Dehra Dún	58
Saháranpur	15
Jaunsár	1,146
Tons	245
Total ...	1,464

The area burnt has therefore been 1·5 per cent. of that of which the protection was attempted. The damage done has fortunately not been great.

The cost of the year's operations has been Rs. 5,311, charged 4,851 to A.VIII.*e*. and 460 to AVIII.*f*. or Rs. 56 per 1,000 acres actually protected. The average cost per 1,000 acres during the previous year was Rs. 72. Fire conservancy in the Dún and Saháranpur will always be more expensive than similar work in the hills; but the great differences observable are doubtless caused by differences in the manner of keeping the accounts, and this subject shall receive attention.

Closure of forests against grazing.

74. All the forests which are protected from fire in the Dún and Saháranpur are also protected against the inroads of herds and flocks. In Jaunsár the area thus closed has been increased by 3,435 acres and that in the Tons by 2,560 acres. The total areas now actually closed (which can be given approximately only) are—

	Acres.
Dún	27,664
Saháranpur	11,000
Jaunsár	15,704
Tons	19,832
Total ...	74,200

As a temporary measure animals are allowed to graze in three small portions of the closed area in Jaunsár.

Sowing and planting.

75. In the Dún an attempt was made over about four acres of blank ground at Bulawála, to sow Sál seed and plant Sál seedlings; 4,829 seed patches and 900 holes were prepared in lines 15 feet apart, the holes and patches being 3 feet apart in the lines. The cost was Rs. 232 or Rs. 58 per acre, and the result is believed by the divisional officer to be a failure; but as it is known that Sál seedlings die down at a certain time of the year, it is hoped that an examination of the ground after the rains may show that the success has not been so poor. The sowing of Sál seed was also undertaken in Saháranpur, where the lines were 30 feet apart. The results here were better, but still very poor. The ground will be examined after the rains. About 20 acres in the Lakarkot Forest were sown with the seed of Khair (*A. catechu*), the method adopted being the same as that for Sál seed; 154,629 living seedlings were counted at the end of March. The total expenditure was Rs 44. In the Bodiar block (Jaunsár Division) about 6,800 Deodar plants about five years old were put out in the forest; yearling seedlings were bedded in the garden, and new nursery beds were prepared and sown. The Deodár plants put out are considered to have been too old, and plants will be put out at an earlier age in future. A small quantity of Deodar seed was sown in Konain, and some work was done in the Deothát nursery (Deoban Forest). Mr. Smythies thinks that November and December are the only months in which seed sowing in patches should be attempted, and that the planting out of strong, healthy nursery plants will probably prove the most effective system of filling up bare spaces. He also brings to notice the fact that Spruce and Blue Pine seed, sown in the autumn of 1878, did not germinate until the rains of 1879, after it had been thought to have entirely failed. The past year was a remarkably bad one for seed of all kinds of coniferous trees. The total expenditure in Jaunsár was Rs. 574.

Some Deodar seed was sown in the Lambatách Forest (Tons Division) at a cost of Rs. 3.

Creeper cutting.

76. Rs. 388 were expended on cutting creepers in the Lakárkot Forest, Saháranpur Division.

Thinning of the Sál Forests.

77. An attempt was made to kill the trees selected for felling in the Bulawála Block, Dehra Dún, and in the Lakarkot Forest, Saháranpur, by girdling them during the hot season. But the trees girdled were so badly injured by the borings of the carpenter bee (*xylocopa*) that the experiment must not be tried again, but they must be marked in the early part of the cold season and sold at once. The compartments of Bulawála thinned according to Mr. Brandis's suggestions will realize about Rs. 21-8-0 per acre, while those thinned under the old system will realise about Rs. 6-7-0 per acre, and the former are left in a much more forward and valuable condition than the latter.

Ringing of Spruce and Silver Fir.

78. A number of trees, poles and saplings of Spruce and Silver Fir were either ringed or cut down in the Lambatách Forest, under the supervision of the native forester, acting under orders from Mr. Rind; but the work was done in a wholesale and unscientific manner, and it must not be continued until it can be carried on under competent superintendence.

Forest gardens.

78. A garden of five acres in extent has been secured near the town of Dehra, on the road to Chakráta and close to the canal. A number of seeds of indigenous and exotic trees were sown, and some plants received from the Saháranpur Botanical Garden were put out. The success has not been great, owing mainly to a deficient water supply from the canal, and to the absence of shade, but it is hoped that a better arrangement can be made next season. A suitable site has been selected at Chakráta, and it is hoped that a garden can shortly be formed there.

Chakráta Cantonment.

80. Two blocks of forest have been made over to the Forest Department for management.

81. The plantations were visited by Mr. Bagshawe and Mr. Smythies, and the following work was done at a cost of Rs. 600, which formed a charge against cantonment funds. 612 young-trees were planted out, eight nursery beds were formed, a fire line five miles long was made, and the area included by it was protected from fire.

Landour Cantonment.

82. In Appendix F. will be found a report by the Superintendent on Carob cultivation in the Saháranpúr Botanical Gardens.

Carob cultivation in the Saháranpur Botanical Gardens.

Yield and Working.

Dehra Dun Division.

Trees felled.

83. The trees felled during the year were:—

				No.	Cubic feet.
Sál trees	...	...	...	3,057	38,009

The numbers felled during the previous year having been—

Trees of various kinds		...	...	2,946	...
Sál poles	...	...	...	12,000	...
Total		...	...	14,946	60,804

All the trees taken out this year were removed as thinnings to improve the growing stock: Of the trees felled, 3,000 were girdled Sál trees purchased as they stood in No. 22 compartment of the Bulawála Block, by Mr. Scott of Mussooree, at an all-round price of Rs. 4 per tree. He intended to convert them into railway sleepers, but they turned out to be so much honey-combed by the borings of the carpenter-bee, that he had to give up the attempt, and to convert them into other scantlings. Mr. Scott bought all the girdled trees in compartment No. 22, and at the time they were sold their condition was not known either to the Deputy Conservator or the purchaser, although both went through the forest together to examine them. As soon as the injury done by the borer was apparent, no offers could be got for the girdled trees standing in compartment No. 24. They are not of a size suited for "tors," and they are still unsold, but it is hoped that they will be eventually sold at a reduced rate.

84. The scantlings lying in the forest, 1,276 pieces measuring 1,820 cubic feet, together with those cut during the year, 5,688 pieces measuring 7,226 cubic feet, are shown as carried to depôt, as are also 300 Sál poles measuring 843 cubic feet, which are not included in the above figures. The total received in depôt was thus 7,255 pieces measuring 9,889 cubic feet: 298 maunds of charcoal were also taken to depôt.

Scantlings, &c., cut, and depôt transactions.

The account of timber and other produce stands thus:—

		Pieces.	Cubic feet.
In hand at commencement of the year	...	18,479	14,801
Received during the year	...	7,255	9,889
Removed by purchasers	...	14,235	16,948
Balance at close of the year	...	11,499	7,742

298 maunds of charcoal made in Bulawála Block, were also in hand at the close of the year.

85. An attempt was made in compartment No. 21 of the Bulawála Block to clear the ground from the remains of former thinnings by burning the refuse wood into charcoal. Several kinds of

Making charcoal.

kilns were tried, and a careful record of the operation was kept; the results, however, are far from satisfactory; 2,265 maunds of Sál wood are said to have produced 394 maunds of charcoal at a cost of Rs. 302. The outturn of charcoal was thus 17 per cent. of the wood put into the kilns, and the cost in the forest was 12 annas a maund. As charcoal fetches only 10 to 11 annas a maund in Dehra, the outturn of the kilns cannot be sold at cost price. Possibly the experiment can be continued next year at a less cost. Experience showed that surface kilns yielded a larger portion of charcoal than pit kilns, and that they were more easily worked.

Actual expenditure on timber works.

86.

Year.	Brought to depôt.			Sold.	
	Timber, cubic feet.	Maunds of charcoal.	Amount paid.	Cubic feet.	Amount realized.
			Rs.		Rs.
1879-80	9,889	298	1,844	16,948	4,289

For information as to the manner in which the amounts paid and realized are calculated, *see para.* 125.

Sales of minor produce by auction.

87. An endeavour was made, but without success, to sell by auction the right to farm the revenue of Dholkot Forest; no bid that could be accepted was made.

Selling tickets for head loads of minor produce through the head men of villages.

88. As sufficient stations for the issue of tickets for head loads of forest produce cannot be established to make the payment for tickets at the stations convenient to the inhabitants of the villages bordering the forest, and as any difficulty attending the purchase of the tickets no doubt induces some otherwise honest persons to remove produce without payment, an attempt was made to remove this difficulty by giving over a number of tickets for sale to the head-men of thirty-seven villages situated near the Western Siwálik Forest, who were to be remunerated by the payment of a percentage on the sales. The effect was to establish a forest station in each village, and it was hoped that as there could no longer be any difficulty attending the obtaining of tickets, and as the headman would have a direct interest in preventing fraud, an increase of revenue would be obtained. The system was further thought to have this advantage, that instead of the forest guards having to remain for the greater part of each day in their chaukis to issue tickets, they are freed to patrol the forests. The anticipations regarding the result of the experiment have not been realized; several of the headmen having returned the tickets, and being desirous of reverting to the old system. It will, however, be persevered with for some time longer.

Collection of grazing dues.

89. The revenue from grazing dues is nearly all now derived from the cattle of residents only, as outsiders usually pay for their tickets in Saháranpur. The collections amounted to Rs. 6,221, as compared with Rs. 10,916 realized during the previous year.

The collection of grazing dues from residents has always been very troublesome, as it took up the time of the establishment in the villages instead of in the forest, and it resulted in an almost yearly balance of irrecoverable arrears. The grazing dues will in future be collected through the tahsíl officials under a set of rules which have been approved by Government. The collectors are to be rewarded by the payment of a percentage on the sums they realize.

Yield in material.

90. The following statement shows the total yield in material from the division for the year, and the revenue realized :—

		Number or quantity.	Amount realized.
			Rs.
Timber of all kinds, ...	cubic feet ...	58,271	21,135
Firewood and charcoal ...	maunds ...	6,810	4,160
Bamboos	scores ...	70,184	6,432
Minor produce, consisting chiefly of grass, fruit, leaves, honey, wax, gum and stone	maunds ...	46,770	2,135
Hides and horns	...	...	306
Grazing dues	...	...	6,221
Drift and waifwood and miscellaneous	...	...	1,093
	Total Revenue	...	41,482

Saharanpur Division.

Trees felled.

91. The trees felled during the year were :—

	Number.	Cubic feet.
Sál trees	5,366	6,937
Other trees	5,706	13,513
Sál saplings	807	200
Other saplings	187	47
Total ...	12,066	20,697

All these trees were taken out as thinnings.

The number felled during the previous year were :—

	Number.	Cubic feet.
Trees of various kinds	2,138	6,971
Saplings of various kinds	914	674
Total ...	3,052	7,645

It was decided to permit the cutting and export by purchasers of green timber of various kinds from the interior of the Siwálik hills, a regular agreement with the contractors being drawn out, and payment being made according to the amount of wood exported. As soon as it became known that wood could be obtained in this manner, several merchants sent in applications for permission to cut; but most of them withdrew their applications when they found that they could only be allowed to cut in certain places and under other restrictions. The divisional officer was aware that some risk of illicit export would be run when he permitted such fellings, and on this account it was determined to permit them only in those "khols" or large ravines, the exit from which lay near to the fire conservancy and other works, where he must of necessity spend a considerable portion of his time. A reduction of rates brought in other applications, and at the present time the demand is such that the re-raising of the rates is under consideration.

A contractor undertook to remove 2,000 of the ringed and naturally dried trees from the Lakarkot Forest, but he removed 543 only. A part of the trees shown as felled were cut by timber merchants in the manner described above, the remainder having been felled when clearing lines, or sold in small quantities as sugar-pestles, &c.

92. The timber for which there is usually a demand has been distributed into three classes, which are :—

Classes and rates for timber.

1st Class.

Sál.
Shisham ... ... (Dalbergia Sissoo).
Tún.

2nd Class.

Sein	...	...	(Terminalia tomentosa).
Khair	...	...	(Acacia Catechu).
Bákli	...	...	(Anogeissus latifolia).
Dháman	...	...	(Grewia vestita).
Daura	...	...	(Lagerstrœmia parviflora).
Goolar	...	...	(Schleichera trijuga).
Sándhan	...	...	(Ougeinia dalbergioides).
Jáman	...	...	(Eugenia Jambolana).

3rd Class.

Comprising all other kinds.

The rates now prevailing in the forest are :—

	Per Cubic foot.
1st class	6 annas.
2nd class	4 „
3rd class	3 „

and Major Jarrett has proposed to raise them to 8, 6, and 4 annas respectively.

Actual expenditure on timber works.

93. Timber works by departmental agency were not undertaken.

Minor produce leases.

94. The system of selling by auction the right to farm the collection of revenue on minor produce was continued in the greater part of the eastern sub-division, while in the western sub-division the revenue was all collected by the establishment at the chaukis.

The system of collection at the chaukis was reported on by the Conservator during the year, and it has in consequence been somewhat modified.

The revenue collected at the chaukis amounts to Rs. 8,826, and that realized by the sale of farming leases amounts to Rs. 8,825.

The leases were as follows :—

Localities.	Rs.
Sakrauda	860
Hazára Pápri	37
Bám Rau to Rauli Rau	3,825
Mohan Gáj	4,050
Majhára	53
Total ...	8,825

Dry fallen firewood has been included in the farming leases, but as it was found that valuable wood was sometimes removed as firewood, the contractors are now not allowed to remove any pieces of more than four feet in length. Bamboos are also included in the leases; charcoal, for which there is but small demand at present rates, has not been included, as there was a danger of valuable timber being used to make it. A form of lease has been approved by Government, and all leases are drawn on this model.

95. The arrears of grazing dues amount to the large sum of Rs. 2,417 exclusive of Rs. 1,076 struck off as irrecoverable during the year.

Grazing dues.

Endeavours are being made to clear off the arrears ; and as the dues will in future be realized through the tahsil officials in the manner explained in para. 89, it is hoped that there will be no more irrecoverable arrears. The amount realized during the year is Rs. 8,094, as compared with Rs. 5,013 last year :—

Yield in material.

96. The following statement shows the yield in material for the year and the revenue realized.

		No. or quantity.	*Amount realized.*
			Rs.
Timber of all kinds	...	Cubic feet, 20,697	5,706
Firewood and charcoal	...	weight unknown	5,199
Bamboos	...	scores 42,199	6,592
Minor produce, consisting chiefly of grass, fruit, leaves, honey, wax, gum and stone.		weight unknown	5,785
Hides and horns	...	... ...	75
Grazing dues	...	... ...	8,094
Miscellaneous	...	... ...	53
		Total revenue ...	31,504

Jaunsar Division.

Trees felled.

97. The following trees were felled during the year :—

				No.	Cubic feet.
Oak	...	...	...	28	2,550
Fir	...	...	...	347	37,900
Chir	...	...	...	23	1,150
		Total	...	398	41,600

The Oak and Fir were dead trees and may be classed as thinnings, but the Chir tree formed part of the mature crop. If for the sake of comparing the fellings with those of the previous year, the trees felled in the Tons Division be added, (2,683 Deodar trees measuring 293,900 cubic feet), the following total is obtained :—

No. of trees.	Cubic feet.
3,081	335,500

The number shown as felled last year was 776 Deodar trees, measuring 111,157 cubic feet. It was not the custom in former years to enter the trees cut for fuel in the returns of trees felled, and their entry this year makes a considerable apparent increase in the numbers. But the large increase in the number felled this year is mainly due to Messrs. Winton and Braidwood's works in Raiengarh, which will be noticed in the paragraph relating to the Tons Division.

Scantlings, &c., cut, and depôt transactions.

98. The following scantlings, &c., were cut :—

			No. of pieces.	*Cubic feet.*
Deodar	...	...	15	48
Sál	...	...	37	95
Blue Pine (P. excelsa)		...	1,355	1,475
	Total	...	1,407	1,618
Oak fuel	...	...	...	2,550
Fir fuel	...	...	...	39,180
		Total	...	43,348

All the scantlings were sent to the Chakráta depôt, except 8 pieces measuring 13 cubic feet which were lost. The fuel was also carried to the Chakráta depôt; the amount left in the forest at the close of the year being only 34,050 cubic feet as compared with the opening balance of 87,360 cubic feet. 1,443 pieces measuring 1,812 cubic feet, and 90,434 cubic feet Fir and Oak fuel were received in depôt.

The "account of timber and other forest produce" is as follows.—

	Pieces.		*Fuel.*	*Total.*
	No.	Cubic feet.	Cubic feet.	Cubic feet.
In hand at commencement of the year.	52,614	125,041	105,075	230,116
Received during the year ...	1,443	1,812	90,434	92,246
Total ...	54,057	126,853	195,509	322,362
Disposals.				
Disposed of to purchasers ...	13,057	20,165	113,497	133,662
Lost or broken ...	78	130	18,052	18,182
Used departmentally ...	13	7	...	7
Written off, error in last year's closing balance.	29,099	85,966	...	85,966
Total ...	42,247	106,268	131,549	237,817
Balance at close of the year,	11,810	20,585	63,960	84,545

Timber sold to public departments.

99. 104,582 cubic feet of Oak and Fir fuel were supplied to the Commissariat-Department at Chakráta at an estimated profit of Rs. 1,116; and 2,285 cubic feet of Deodár and Rai timber were supplied to the Executive Engineer, Chakráta Division, Military Works, at an estimated profit of Rs. 281.

The following sleepers were supplied to railways :—

No.	*Length.*	
135	15′	Sindia State Railway.
2,419	Broad-gauge	
1,074	Metre-gauge ...	Rájputana State Railway,

but when considering the profits gained, the following sleepers supplied by the Tons Division must be added.

17,638 Broad-gauge ... Sindia State Railway.

The total estimated profit is Rs. 24,300.

Supply of forest produce to villagers without payment.

100. In accordance with the arrangement made last year, and described in last year's report, to supply a definite amount of timber free of charge to the villagers of Jaunsár Báwar, the following trees, &c., have been supplied to them during the year :—

	No.
Green Deodar	60
Karis and planks from dry Deodar	2,212
Blue Pine trees	71
Outside slabs	200
Spruce Fir trees	58
Chir trees	107
Moru Oak trees	107
Bán Oak trees	283
Loads of torch-wood	244
Ringáls	92

						No.
Cypress trees	...	...	...	...	...	2
Sál trees	...	...	...	...	...	30
Ṡoin trees	...	...	...	...	...	50
Bákli trées	...	...	...	...	...	40
Sándhan trees	...	...	...	...	...	60
Singor trees	...	...	...	...	...	20
Haldu trees	...	...	...	...	...	20
Korwa Kokat	...	...	...	...	(*Scores*)	30
Tham-balli	...	...	...	...	(„)	4
Ploughs	...	...	...	...	...	2

Including the amounts granted to the inhabitants of Jaunsár-Báwar who reside within the Tons Division, the amount given is much less than that to which the people are entitled under the agreement. This is chiefly to be accounted for by the scarcity of food which prevailed during the year, and which rendered it difficult for the people to remove the produce. It is, however, also likely the quantity entered in the agreements is greater than that which the people really require. The three last items given do not appear in the list of the produce to which the people are entitled by agreement. It will be better not to allow any deviation from the sanctioned list.

Actual expenditure on timber works.

101. As the Tons Division was formed in the middle of the year, the figures given below will comprise the entire transactions of both divisions for the year.

Year.	*Brought to Depôt.*			*Sold.*		
	Timber.	Fuel.	Amount paid.	Timber.	Fuel.	Amount realized.
1879-80.	Cubic feet. 158,391	Cubic feet. 90,434	Rs. 1,07,205	Cubic feet 162,325	Cubic feet. 113,497	Rs. 2,12,035

For information as to the manner in which the amounts paid and realized are calculated, see para. 134.

Sale of minor produce by auction.

102. The right to farm the revenue on minor produce in the Kálsi Forest was sold for Rs. 600.

Collection of grazing dues.

103. The amount realized was Rs. 1,020, as compared with Rs. 1,694 last year.

Yield in material.

104. The following statement shows the total yield in material during the year and the revenue realized. The figures of the present Tons Division to the date of its formation are included :—

		No. or quantity.	*Amount realised.*
			Rs.
Timber of all kinds	cubic feet	20,165	21,968
Firewood and charcoal	„	113,497	19,774
Bamboos ...	scores	237	23
Minor produce, consisting chiefly of grass and leaves.	weight unknown		200
Grazing dues		...	... 1,020
Drift and waifwood and miscellaneous		...	... 890
		Total revenue	... 43,875

Tons Division.

105. The following trees were felled during the year.

		No.	*Cubic feet.*
Deodar, green	... ...	2,458	271,400
Deodar, dry	... .	225	22,500
	Total ...	2,683	293,900

All being fellings from the mature crop. 2,741 of the trees were felled by Messrs. Winton and Braidwood in Raiengarh, and the remainder were felled in the Temple and Dupta Blocks of Deota Forest.

Scantlings cut and depôt transactions.

106. The following scantlings were cut :—

		No. of pieces.	Cubic feet.
Deodar sleepers,	broad-gauge	47,516	164,985
" "	metre-gauge	59,767	99,506
"	scantlings (various)	57	231
Chir scantlings	... ...	172	1,104
	Total ...	107,512	265,826

827 pieces measuring 2,921 cubic feet were either used departmentally, broken, or lost, and the remainder, 72,338 pieces measuring 156,579 cubic feet, were taken to depôt.

The "account of timber and other forest produce" stands thus :—

		No. of pieces.	Cubic feet.
Received during the year	...	72,338	156,579
Disposed of during the year	...	67,642	142,160
Balance at close of the year	...	4,696	14,419

Timber sold to public departments.

107. 17,638 broad-gauge sleepers were supplied to the Sindia State Railway, the profits being shown in the paragraph relating to the Jaunsár Division.

50,000 metre-gauge sleepers were supplied to the Rájputana State Railway, the estimated profit being Rs. 63,137.

Supply of forest produce to villagers without payment

108. To villagers of Jaunsár Báwar the following trees, &c., were given :—

	No.
Green Deodar trees	3
Deodar karis and planks from dry trees	78
Blue Pine trees	14
Chir trees	50

and the following were given to villagers of Tiri-Garhwál—

Green Deodar trees	4
Dry	17
Deodar planks	103
Blue Pine trees	92

Actual expenditure on timber works.

109. See remarks in the paragraph treating of the Jaunsár Division.

Yield in material.

		No. or quantity. Cubic feet.	Amount realised. Rs.
110.	Timber of all kinds.	142,160	170,568
	Drift and waifwood and miscellaneous		12
	Total		170,580

Summary for the Circle.

Trees felled.

111. The number and cubic contents of trees felled during the year were :—

Number.		Cubic feet.
18,204	... ...	394,206

Of these, 2,706 trees, measuring 295,030 cubic feet, formed part of the mature crop, and the remainder are classed as thinnings. The number and cubic contents of the trees felled during the previous year were—

Number.				*Cubic feet.*
18,774	...	...	...	187,816.

The trees felled this year consisted principally of girdled Sál trees in Dehra Dún, green timber of various kinds from the interior of the Siwálik hills in Sabáranpur, Oak and Fir trees for the supply of fuel to the Chakráta cantonment in Jaunsár, and Deodár trees felled for conversion into railway sleepers in the Tons Division. Among those felled in the last-named division, 2,141 Deodar trees felled by Messrs. Winton and Braidwood in Raiengarh form the principal item.

Scantlings, &c., cut, and depôt transactions.

112. The following is an abstract of the scantlings and fuel cut during the year :—

		Pieces.	*Cubic feet.*
Sál karis	...	1,151	1,656
,, Ballis and beams ...	...	4,074	4,165
,, Tors	...	500	1,500
Deodar sleepers, broad-gauge	...	47,516	164,985
,, ,, metre-gauge	...	59,767	99,506
,, various	...	72	279
Chír	...	172	1,104
Blue Pine	...	1,355	1,475
Fuel, Oak and Fir ...	...	...	41,730
Total	...	114,607	316,400

The following timber and other produce was brought to depôt during the year :—

		Pieces.	*Cubic feet.*
Sál	...	7,292	9,984
Deodar sleepers ...	...	72,834	156,539
Deodar, various ...	...	38	273
Blue Pine	...	1,347	1,462
Shisham	...	15	19
Tún	...	10	3
Fuel, Oak and Fir ...	...	...	90,434
Total		81,036	258,714

and 298 maunds of charcoal.

The "account of timber and other produce" stands thus—

		Pieces.	*Fuel.*	*Total.*
	No.	Cubic feet.	Cubic feet.	Cubic feet.
In hand at commencement of year	71,093	139,842	105,075	244,917
Received during the year ...	81,036	168,280	90,434	258,784
Disposed of during the year ...	124,124	265,376	131,549	396,925
Balance at close of the year	28,005	42,746	63,960	106,706

and 298 maunds of charcoal.

Charcoal making.

113. An attempt was made to clear the ground in one of the thinned compartments of the Bulawála Block by the conversion of the refuse wood into charcoal; but the undertaking was not a financial success.

114. The timber for which there is usually a demand has been divided into three classes, and the selling rates are as follows :—

Classes of timber in the Saháránpur district.

	Per Cubic foot.
1st class	... 6 annas.
2nd „	... 4 „
3rd „	... 3 „

It is now proposed to raise the rates to 8, 6 and 4 annas respectively.

Timber sold to public departments.

115. The supplies to public departments during the year were as follows :—

	Cubic feet.	Estimated profit. Rs.
To Commissariat Department—fuel ...	104,582	... 1,116
To Chakráta Division, Military Works ; Deodar and Rai scantlings.	2,285	... 281
	Number.	
To State Railways—sleepers	71,266	... 87,437
Total estimated profit		... 88,834

Supply of forest produce to villagers without payment.

116. The amount supplied during the year to the villagers of Jaunsár Bawár is considerably below that to which they are entitled by the agreement alluded to in last year's report. This is partly accounted for by the scarcity of food in the pargana, but the quantities entered in the agreement are probably in excess of the real requirements of the people.

Actual expenditure on timber works.

117.

Year.	Brought to Depôt.			Sold.		Amount realized.
	Timber, cubic feet.	Fuel, cubic feet.	Amount paid.	Timber, cubic feet.	Fuel, cubic feet.	
1879-80 ...	168,280	90,434—maunds of charcoal, 298.	Rs. 1,17,578	179,273	113,497	Rs. 2,16,324

* For information as to the manner in which the amounts paid and realized have been calculated, see para. 138.

Sales of minor produce by auction.

118. The system of selling the right to farm the revenue on minor produce has been continued in the eastern sub-division of Sahárانpur, five such leases having been sold for Rs. 8,825. The leases include firewood (in pieces not exceeding four feet in length) and bamboos, but not charcoal. An endeavour to sell a lease of the Dholkot Forest in Dehra Dún failed. The lease of the Kálsi forest in Jaunsár was sold for Rs. 600.

Selling tickets for minor produce through the head-men of villages.

119. An attempt was made to make use of the headmen of villages in Dehra Dún as agents for the sale of tickets for minor produce ; but the experiment has not so far proved a success. It is intended to try the experiment in the Sahárانpur district.

Collection of grazing dues.

120. The system of collection by departmental agency which obtained at the commencement of the year was found to occupy too much of the time of the forest establishment outside the limits of the forest, and it has frequently been necessary to strike off large sums as irrecoverable arrears. An arrangement has now been made, with the approval of Government, by which the grazing dues will be collected through the revenue officials, who will receive a percentage on the collections, as they do in the case of collections for the Canal Department, and it is hoped that all sums really due will now be punctually realized.

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The revenue from grazing dues this year amounted to Rs. 15,335, as compared with Rs. 17,624 realized last year.

Yield in material.

121. The following statement is an attempt to show the yield in material during the year. The statement is as yet very imperfect owing to the records of sale of most kinds of minor produce in the Saháranpur Division being kept in loads of various kinds instead of by weight. Dr. Warth has been requested to determine the average weight of the various kinds of loads of each description of produce; and the results of his investigations will be adopted in his and in other divisions as far as they are applicable. Dr. Warth has also been requested to undertake experiments with a view to determine the solid contents of bamboos of various classes.

	Number or quantity.				Amount realized.
	Dehra Dún.	Saháranpur.	Jaunsár.	Tons.	
					Rs.
Timber of all kinds (cubic feet) ...	58,271	20,697	20,165	142,160	219,377
Firewood and charcoal, (maunds) ...	6,810	unknown	c. ft. 113,497	...	29,133
Bamboos (scores)	70,184	42,199	237	...	13,047
Minor produce, consisting principally of grass, fruit, leaves, honey, wax, gum and stone (maunds) ...	46,770	unknown	unknown	...	8,120
Hides and horns	Unknown	unknown	...	...	381
Grazing dues	...	...	...	...	15,335
Drift, waifwood. and miscellaneous ...	...	...	...	...	2049
Total Revenue ...	...	...	...	...	2,87,442

Financial Results.

Direction Division.

Receipts, charges, and surplus.

122. There was no revenue, and the expenditure, as compared with that of the previous year, was—

	1878-79.	1879-80.
	Rs.	Rs.
A.	173	26,651
B.	9,574	22,729
Total ...	9,747	49,380

The difference is thus accounted for. The pay and travelling allowance of the Conservator, the pay of the office establishment, and the contingent charges are for a period of twelve instead of six months; a number of probationers have been paid; and Rs. 25,025 have been expended in the purchase and repair of the new office buildings.

Distribution of the expenditure under the three main heads.

123.

	Heads.	Receipts.		Charges.		Remarks.
1	Timber and other produce removed on Government account.	...	...	8,524	½B.	The charges have been distributed as seemed most suitable, with reference to the work done and the revenue received under each head.
2	Timber and other produce removed by purchasers, and other revenue.	...	...	2,841	½B.	
3	Formation, protection and improvement of the forests.	...	...	38,015	VI. VII. IX. ½B.	
	Total ...	...	...	49,380		

Value of stock.

123*a*. The value of stock at the commencement of the year was Rs. 251, and at its close the value was Rs. 20,957. The difference is mainly due to the purchase of new office buildings.

Dehra Dun Division.

Receipts, charges, and surplus.

124. The receipts, charges, and surplus, as compared with those of the previous year, were :—

		1878-79.	1879-80.
		Rs.	Rs.
Receipts	... ...	48,490	41,482
Charges ...	A.	15,420	9,855
	B.	23,513	18,702
	Surplus ...	9,557	12,925

The surplus for 1879-80 amounts to Rs. 47 per square mile, or 1 anna 2 pies per acre. The figures for the previous year were Rs. 34 per square mile or 10 pies per acre.

The Saháranpur Division was separated from the Dehra Dún Division in the middle of the year 1878-79, so that comparison should also be made for the two divisions taken together. The surplus in 1878-79 was Rs. 16,802, while in 1879-80 it was Rs. 23,328; which is an increase of nearly 40 per cent. This is creditable to the officers who have held charge of the divisions (Mr. O'Callaghan and Major Jarrett).

Distribution of revenue and expenditure under three main heads.

125.

	Heads.	Receipts.		Charges.		Remarks.
		Amount.	Budget head.	Amount.	Budget head.	
		Rs.		Rs.		
1	Timber and other produce removed on Government account.	4,289	I.	1,844	I. ½ VI. $\frac{1}{10}$B.	The charges have been distributed in the manner that seemed most suitable, with due consideration to the work done and the revenue received under each head.
2	Timber and other produce removed by purchasers, and other revenue.	37,193	II., III. and IV.	9,677	II. III. IX. ½ VI. $\frac{7}{10}$B.	
3	Formation, protection and improvement of the forests.	...	...	17,036	V. VII. VIII ½ VI. ½ B.	
	Total ...	41,482	...	28,557		

Value of stock.

126. The value of stock at the commencement of the year was Rs. 6,596, and at its close the value was Rs. 8,367, showing an increase of Rs. 1,771, due mainly to the transfer of an elephant from the Jaunsár Division.

Financial results of the year's operations.

127.

	Rs.	Rs.
Surplus revenue of the year	12,925	
Add—		
Balance of outstandings at close of year in favor of Department	2,904	
Increased value of stock	1,771	
		17,600
Deduct—		
Balance of outstandings at commencement of the year in favor of Department		2,416
Balance in favor of the Department on the year's transactions		15,184

Saharanpur Division.

Receipts, charges, and surplus.

128. The receipts, charges, and surplus, as compared with those of the previous year, were—

		1878-79. Rs.	1879-80. Rs.
Receipts	... ...	15,853	31,504
Charges,	A.	3,324	7,569
	B.	5,284	13,532
	Surplus	7,245	10,403

The surplus for 1879-80 amounts to Rs. 38 per square mile, or 11 pies per acre. The figures for the previous year were Rs. 26 per square mile, or 7½ pies per acre. See remarks in the paragraph treating of the Dehra Dún Division.

Distribution of the revenue and expenditure under the three main heads.

129.

	Heads.	Receipts. Amount.	Receipts. Budget head.	Charges. Amount.	Charges. Budget head.	Remarks.
		Rs.		Rs.		
1	Timber and other produce removed on Government account.	...	I.	5	I.	The charges have been distributed in the manner that seemed most suitable, with due consideration to the work done and the revenue received under each head.
2	Timber and other produce removed by the purchasers, and other revenue.	31,504	II., III. and IV.	11,343	II, III, IX, ½ VI, ½ B.	
3	Formation, protection and improvement of the forests.	...	...	9,753	VII, VIII, ½ VI, ½ B.	
	Total ...	31,504	...	21,101		

130. The value of stock at the commencement of the year was Rs. 3,788, and at its close the value was Rs. 3,941.

Value of stock.

Financial results of the year's operations.

	Rs.	Rs.
131. Surplus revenue of the year,	10,403	
Add—		
Balance of outstandings at close of year in favor of Department	58	
Increased value of stock	153	
		10,614
Deduct—		
Balance of outstandings at commencement of year in favor of Department		*Nil.*
Balance in favor of the Department on the year's transactions,		10,614

Jaunsar and Tons Divisions.

132. In consequence of the formation of the Tons Division in the middle of the year, and the accounts being therefore inseparable for the first half of the year, the two divisions, Jaunsár and Tons, will in this section be considered together.

Receipts, charges, and surplus.

133. The receipts, charges, and surplus, as compared with those of the previous year, were :—

		1878-79. Rs.	1879-80. Rs.
Receipts	....	2,62,436	2,14,455
Charges	A.	1,89,252	1,15,400
	B.	27,156	21,37
	Surplus	46,028	74,681

The surplus for 1879-80 amounts to Rs. 419 per square mile, or 10½ annas per acre. The figures for the previous year were Rs. 270 per square mile, or 6 annas 9 pies per acre.

The surplus in the Jaunsár and Tons Divisions is liable to so much variation, dependent on the time at which credit is received for sleepers supplied to the Railway Department, and at which settlements of accounts can be made for work done, that but little can be judged from the results of one year. If Messrs. Winton and Braidwood's accounts had been settled for all the sleepers sold, the surplus would have nearly approached that of last year.

Distribution of the revenue and expenditure under the three main heads.

134.

	Heads.	Receipts.		Charges.		Remarks.
		Amount.	Budget head.	Amount.	Budget head.	
		Rs.		Rs.		
1	Timber and other produce removed on Government account.	2,12,035	I.	1,07,205	I. ⅛ VI. 7/16 B.	The charges have been distributed in the manner that seemed most suitable, with reference to the work done under each head.
2	Timber and other produce removed by purchasers, and other revenue.	2,420	II. III. and V.	2,468	II. IX. 1/16 VI. 1/16 B.	
3	Formation, protection and improvement of the forests.	...	...	30,101	V. VII. VIII. 3/16 VI. ½ B.	
	Total ...	2,14,455	...	1,39,774		

Value of stock.

135. The value of the stock at the commencement of the year was Rs. 1,49,017, and at its close the value was Rs. 77,832, showing a decrease of Rs. 71,185, due principally to sales of timber and fuel.

Financial results of the year's operations.

136.

		Rs.	Rs.
	Surplus revenue of the year ...	74,681	
Add—			
	Balance of outstandings at close of year in favor of Department	1,00,812	
			1,75,493
Deduct—			
	Decreased value of stock	71,185	
	Balance of outstandings at commencement of year in favor of Department,	23,140	
			94,325
	Balance in favor of the Department on the year's transactions		81,168

The above is in exact accordance with the audited accounts; but a sum of about Rs. 32,000 will, as soon as their accounts can be settled, become due to Messrs. Winton and Braidwood on account of sleepers sold by the Department, and the price realized on which is credited in the accounts; so that the actual profit on the year's transactions will be about Rs. 49,000.

Summary for the Circle.

Receipts, charges, and surplus.

137. The receipts, charges, and surplus, as compared with those of the previous year, were :—

		1878-79.	1879-80.
		Rs.	Rs.
Receipts	... ...	3,26,780	2,87,442
Charges	A. ...	2,08,170	1,59,475
	B. ...	65,527	79,338
Surplus	...	53,083	48,629

The surplus for 1879-80 (allowing for the charges in the Direction Division) amounts to Rs. 66 per square mile or 1 anna 8 pies per acre. The figures for the previous year (also including the Direction Division) were Rs. 73 per square mile, or 1 anna 10 pies per acre.

There is a satisfactory increase of surplus in the Dún and Saháranpur, and while all charges on account of sleepers sold have not been debited, about Rs. 26,000 have been spent on the purchase of the new buildings, which forms an unusual charge.

Distribution of the revenue and expenditure under the three main heads.

138.

	Heads.	Receipts. Amount.	Receipts. Budget head.	Charges. Amount.	Charges. Budget head.	Remarks.
		Rs.		Rs.		
1	Timber and other produce removed on Government account.	2,16,324	I.	1,17,5[illegible]	...	
2	Timber and other produce removed by purchasers, and other revenue.	71,118	II III. and V.	26,329	...	For distribution of charges, see the statements for each division.
3	Formation, protection and improvement of the forests.	...	...	94,906	...	
	Total ...	2,87,442	...	2,38,813	...	

Value of stock.

139. The value of stock in hand at the commencement of the year was Rs. 1,59,652, and the value at its close was Rs. 1,11,097, showing a decrease of Rs. 48,555. The principal transactions were the purchase of the new office buildings, and the sale of timber and fuel.

Financial results of the year's operations.

140. Surplus revenue of the year ... 48,629

	Rs.	Rs.
Add—		
Balance of outstandings at close of year, In favor of Department	1,04,341	
		1,52,970
Deduct—		
Decreased value of stock	48,555	
Balance of outstandings at commencement of year. (In favor of Department.	25,824	
		74,379
Balance in favor of the Department on the year's transactions		78,591

This statement, which includes the figures for the Direction Division, is made in exact accordance with the audited accounts, but about Rs. 22,000 must be deducted from the estimated profits, on account of the sum which will, as soon as their accounts can be settled, become due to Messrs. Winton and Braidwood for sleepers which have been sold by the Department. The actual profit on the year's transactions is thus about Rs. 46,000.

CHAPTER III.

Unreserved or District Forests.

141. There are no forests of these classes in the Circle.

CHAPTER IV.

General Remarks.

Prospects of an increased revenue, Dehra Dún.

142. The prospects are not very encouraging. As is well known, little or no mature timber remains in the forests, and they have to compete with a considerable export of timber of small classes from private forests. There will always be a small amount of dry Sál which can be exported in the shape of "tors," and there is a ready sale for them; but it will not be possible, as had been hoped, to increase the supply of this kind of wood by girdling trees. Thinnings will continue to be made in the fire-protected blocks, and they should produce a good revenue for some years; but the trees that will be cut are not as a rule of a size that is suitable for "tors." The local demand for produce is small, and it does not seem likely that it can be much increased at present; and the forests will not for some time to come yield timber of a kind that will induce merchants from a distance to visit them. Every possible exertion will however be made with a view to increase the yearly surplus revenue: and no opportunities of selling such produce as we have will be lost. If the Dún Railway is ever made it will no doubt produce a large demand for wood, fuel, charcoal, lime, and other things, and the forest revenue should greatly benefit from it.

Saháranpur.

Major Jarrett says that at the rates now demanded for green timber from the Siwálik hills he could have disposed of a much larger quantity than was actually sold; but it is necessary to restrict the working to a few localities, otherwise sufficient control cannot be exercised. It was found impossible to mark the trees for felling, and all that could be done was to bind the contractors by agreement not to fell on ridges or steep ground. It is hoped that in future a better system can be adopted, and an endeavour will be made to mark the trees before they are sold. It is likely that a considerable revenue could be derived from the sale of this wood; but although the area of the hill forests is very large (about 200 square miles), and the inaccessibility of a great part of them renders it unlikely that they could be quickly denuded of trees, still fires do enormous damage, and it will be necessary to take care that trees are cut only in places from which they can be spared, with due regard to the maintenance and improvement of the crop. A detailed examination of the "khols" from which it is proposed to export timber will it is believed show that there are many places from which a large number of trees can be removed with perfect safety, and a steady and increasing revenue may be expected from this source.

It is hoped that the system of leasing the right to farm the revenue on minor produce will result in an annual increase for some years to come.

Jaunsár.

The revenue from this division is chiefly derived from sales to Public Departments; and the Forest Department can exercise no influence over the demand. As soon as the valuation survey of the Deodar forests in the Dháragádh and Riknárgádh can be completed, it will be seen whether it will be advisable to undertake the supply of railway sleepers from these forests. This should, if possible, be done, so as to increase the yearly revenue.

Tons.

The revenue in this division is derived almost entirely from the supply of sleepers to the Railway Department. It has been decided to cut a fixed annual amount from the Deota Forests: and no trees are for the present to be cut in Lambatách. The sleepers cut up by Messrs. Winton and Braidwood in Rajengarh will all be exported in 1880-81, and it is not likely that any additional fellings can be undertaken in that forest for some years to come. A valuation survey is being conducted in the Surárs Forest, and as soon as this is completed, a similar survey of the forests of the Kotigárh, and of those in Dáli will be undertaken. The leased forests of Bashahr should also be examined with the view to determining what areas it is desirable to reserve. When these works have been carried out it will be possible to say to what extent the annual outturn of sleepers can be increased. It will probably prove advisable to convert the outturn into metre-gauge sleepers, for which there is a steady demand for conveniently situated railways.

Iron making.

143. Dr. Warth will be employed, as soon as he can be spared from his duties in connection with the Saháranpur Division, to investigate the resources of iron ore in the neighbourhood of the hill forests. The supply of wood near the principal iron mines in Bashahr is believed to be getting scarce, and endeavours will be made to induce some of the iron workers to "prospect" in the Government forests for new mines.

Services of officers

144. The officers of the superior staff have generally carried out their duties to the satisfaction of the Conservator. The forest and office establishments have also as a rule worked well. Mr. Jeffries, Head Assistant to the Conservator of Forests, continues to merit the praise given in former reports.

The best thanks of the Conservator are due to Mr. H. G. Ross, C.S., Superintendent of the Dún, for his cordial co-operation in all measures affecting the welfare of the forests.

APPENDICES.

FORM No. 45.

Forest Department, N.-W. Provinces and Oudh (School Circle).

Area of Reserved and Leased Forests, 1879-80.

Division or Range.	Name of Forest and Civil District or Territory.	*Area on 1st April*, 1879.		*Added during the year.*		*Excluded or transferred to other heads.*		*Total on 31st March*, 1880.		Number and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles	Acres.	Square miles.	Acres.		
	Dehra Dún District.										
Dehra Dún Division.	Western Siwálik	77	49,453	...	...	...	233	77	49,220		The final areas have now been given by the Forest Survey Department and the changes shown as having taken place during the year are merely corrections of the figures as formerly given.
	Eastern ditto	105	66,931	...	1,454	...	...	107	68,385		
	Rámpur Mandi	2	985	...	...	...	47	2	938		
	Ambári	7	4,096	...	107	...	...	7	4,203		
	Chándpur	3	2,163	...	88	...	...	3	2,251		
	Dholkot	8	5,081	...	...	...	255	8	4,826		
	Tháno	10	6,374	...	233	...	...	10	6,607		
	Nágaidh	25	16,243	...	...	...	127	25	16,116		
	Tirsál ... Tirsál ...	14	9,049	...	59	...	...	14	9,108		
	Tirsál ... Sainkot ...	14	9,019	...	...	...	122	14	8,897		
	Saora Siroli... Kachár ...	...	237	...	...	...	9	...	228		
	Saora Siroli... Saora Siroli ...	2	966	...	10	...	...	2	976		
	Song	1	896	...	43	...	...	1	939		
	Rirpur	1	430	...	17	...	...	1	447		
	Rikikesh	...	6	...	...	...	...	...	6		
	Tapuban	...	42	...	...	...	...	...	42		
	Jogiwála	...	4	...	...	...	...	...	4		
	Southern Málkot	7	4,678	...	...	...	92	7	4,586		
	Total, Dehra Dún Division ...	276	176,653	...	2,011	...	885	278	177,779		
	Saháranpur District.										
Saháranpur Division.	Eastern Siwálik, *including* Lakarkot.	142	91,082	...	5,854	...	...	94	59,272		Ditto.
	Roorkee							57	36,964		
	Western Siwálik	125	79,971	...	..	...	4,400	118	75,571		
	Majhára	7	4,313	...	...	...	20	7	4,293		
	Total, Saháranpur Division ...	274	175,366	...	5,854	...	4,420	276	176,800		

		Dehra Dún District.								
Jaunsár Division.	Head-quarters.	Kálsi	7	4,596	...	...	...	...	7	4,596
		Strips on Jumna and Tons ...	...	201	...	...	...	...	...	201
		Bairát	...	296	...	...	...	...	...	296
		Amláwa	...	411	...	...	...	...	...	411
		Tiri-Garhwál.								
		Rawai	3	1,600	...	...	...	...	3	1,600
		Jaunpur	...	...	...	*1,280	...	...	2	1,280
		Dehra Dún District.								
	Deoban...	Lokandi	11	7,042	...	...	...	...	11	7,042
		Deoban	10	6,709	...	...	...	...	10	6,709
		Ekra	9	5,468	...	...	...	...	9	5,468
		Karamba	18	11,288	...	...		...	18	11,288
		Konain	7	4,384	...	...	...	...	7	4,384
	Báwar ...	Riknár	8	4,866	...	...	...	...	8	4,866
		Dháragádh	20	13,035	...	...	...	...	20	13,035
		Dharmigádh	14	8,890	...	...	...	...	14	8,890
		Bástil	5	2,925	...	...	...	...	5	2,925
		Total, Jaunsár Division ...	112	71,711	...	1,280	...	...	114	72,991
		Dehra Dún District.								
Tons Division,		Kunigádh	18	11,549	...	...	...	...	18	11,549
		Deogár	18	11,515	...	...	...	...	18	11,515
		Tiri-Garhwál.								
		Lambatách	5	3,063	...	...	...	...	5	3,063
		Deota (with Surárs) ...	13	8,468	...	...	...	...	13	8,468
		Dátmir	4	2,560	...	...	...	...	4	2,560
		Other Native States.								
		Raiengarh	...	...	...	2,560	...	...	4	2,560
		Dádi	...	...	...	960	...	...	2	960
		Bashahr	...	...	...	Unknown.	...	...	...	Unknown.
		Total, Tons Division ...	58	37,155	...	3,520	...	...	64	40,675
		GRAND TOTAL ...	720	460,885	...	12,665	...	5,305	732	468,245

* Transferred from Bhágirathi Division, Central Circle.

The areas given for the Jaunsár and Tons Divisions are approximate only.

FORM No. 46.—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Area of Plantations, 1879-80.

Division.	Name of Plantation.	On 1st April, 1879.		During 1879-80.		On 31st March, 1880.		Remarks regarding expenditure during 1879-80.
		Area.	Total cost.	Area added.	Cost.	Total area.	Total cost.	
			Rs. a. p.	Rs.	Rs. a. p.	Rs.	Rs. a. p.	
Dehra Dún ...	Bulawála	1	97 0 0	4	232 0 0	5	329 0 0	Expenditure charged to A.VIIIf.
	Total ...	1	97 0 0	4	232 0 0	5	329 0 0	
Saháranpur ...	Shámansur	4	123 0 0	...	13 0 0	4	136 0 0	Fencing.
	Total ...	4	123 0 0	...	13 0 0	4	136 0 0	
Jaunsár ...	Katián (Deodar)	229	2,947 0 0	...	...	229	2,947 0 0	Expenditure all charged to A.VIIIf., with the exception of the work at Deothát which is a nursery, all the other work consists merely of filling up blanks in the forest. Miscellaneous charges in last year's return charged to the plantations.
	Konain (Ditto)	106	2,257 0 0	...	67 0 0	106	2,324 0 0	
	Kanásar (mixed)	139	1,656 0 0	...	...	139	1,656 0 0	
	Bodiar (Deodar, Rai, Kail) ...	355	3,608 0 0	10	366 0 0	365	3,974 0 0	
	Koruwa	15	163 0 0	...	...	15	163 0 0	
	Deothát (Deodar, Rai, Kail) ...	143	1,632 0 0	...	141 0 0	143	1,773 0 0	
	Mátkángra (Oak)	51	699 0 0	...	...	51	699 0 0	
	Thona (Rai)	4	732 0 0	...	...	4	732 0 0	
	Landour Cantonment (Deodar, Cypress, Spruce, Blue Pine).	...	1,642 0 0	50	600 0 0	50	2,242 0 0	Funds provided by the Military Department.
	Total ...	1,042	15,336 0 0	60	1,174 0 0	1,102	16,510 0 0	
Tons ...	Mandhol (Deodar)	11	394 0 0	...	...	11	394 0 0	
	Total ...	11	394 0 0	...	...	11	394 0 0	
	GRAND TOTAL ...	1,058	15,950 0 0	64	1,419 0 0	1,122	17,369 0 0	

FORM No. 47—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Area of Forest tracts protected from fire during the dry season of 1880 (*to accompany report*, 1879-80).

Division.	Forest tracts.	Up to 1st July, 1879.		During dry season of 1880.					Year when protection commenced.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended	Total cost up to 30th June, 1880.	
		Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	Rs.	
Debra Dún	Bulawála	7,952	7,508	8 405	58	8,347	1,146	8,654	1872.
	Tháno	...	1,749	6,400	...	6,400	508	2,257	1877.
	Dúluwála	1,630	203	1,630	...	1,630	593	796	1878.
	Balindawála ...	...	152	6,512	...	6,512	323	475	1878.
	Asarori	...	518	4,717	...	4,717	295	813	1878.
	Total ...	9,582	10,130	27,664	58	27,606	2,865	12,995	
Saháranpur	Lakarkot Block ...	4,500	867	4,500	1	4,499	547	1,414	1878.
	Ganjarban " ...	...	...	4,000	...	4,000	284	284	1879.
	Kálushahid " ...	...	...	1,500	14	1,486	162	162	1879.
	Daula " ...	...	27	1,000	...	1,000	80	107	1878.
	Total ...	4,500	894	11,000	15	10,985	1,073	1,967	
Jaunsár ...	*Head-quarter's Range.*								
	Kálsi, Bairát, Amláwa ..	1,167	294	1,567	...	1,567	14	308	1872.
	Rawai (Shálna and Banál), Jaunpur.	1,600	73	2,880	...	2,880	12	85	1872.
	Deoban Range.								
	Lokandi	4,338	269	4,838	...	4,838	120	389	1872.
	Deoban, Ekra, Konain,	7,680	311	7,680	6	7,674	144	455	1872.
	Karámba	5,592	128	5,592	500	5,092	8	136	1872.
	Bawar Range.								
	Riknár, Dhárागádh, Dharmigádh, Bastil.	10,298	500	11,909	640	11,269	115	615	1872.
	Total ...	30,675	1,575	33,966	1,146	32,820	413	1,988	
Tons ...	Dátmir	2,560	100	2,560	50	2,510	12	112	1872.
	Kunigádh, Molta, and part of Chatra.	3,226	124	3,226	5	3,221	519	643	1872.
	Deogár, including Raiengarh.	8,445	513	8,495	160	8,335	89	602	1879. (Raiengarh,)
	Deota, Lambatách ...	6,185	524	9,511	30	9,481	340	864	1872.
	Total ...	20,416	1,261	23,792	245	23,547	960	2,221	
	GRAND TOTAL ...	65,173	13,860	96,422	1,464	94,958	5,311	19,171	

	Rs.
Charged in previous years...	12,259
" " 1879-80	5,032
" " 1880-81	1,876
Total	19,171

FORM No. 48.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Prosecutions for Breaches of Forest Rules, 1879-80.

Forest Division and Civil District.	*Injury to forests by fire.*		*Unauthorized felling or appropriation of wood and minor forest produce.*		*Grazing without permission or in tracts in which grazing is prohibited.*		*Other offences.*		TOTAL.			
									Prosecutions.		*Convictions.*	
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.
DEHRA DÚN DIVISION.												
Dehra Dún District	...	...	2	3	...	...	...	...	2	3	2	3
SAHÁRANPUR DIVISION.												
Saháranpur District	...	...	8	11	...	...	2	4	10	15	7	9
JAUNSÁR DIVISION.												
Dehra Dún District	10	21	14	40	8	12	8	28	40	101	38	80
TONS DIVISION.												
Dehra Dún District	2	9	...	...	...	...	1	1	3	10	3	10
Total	12	30	24	54	8	12	11	33	55	129	50	102

FORM No. 49.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Summary of Revenue and Expenditure of the different Divisions, 1879-80.

Budget Heads.	Direction.	Dehra Dún Division.	Saháranpur Division.	Jaunsár Division.	Tons Division.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
RECEIPTS.						
I.—Timber and other produce removed from the forests by Government Agency :—						
a. Timber	...	4,288 11 5	...	21,921 7 11	1,70,565 0 0	1,96,775 8 2
b. Firewood and charcoal	...	...	...	19,545 11 8	...	19,545 11 8
c. Bamboos	...	...	...	...	...	...
d. Sandal-wood	...	...	...	...	...	...
e. Grass and other minor produce	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers :—						
a. Timber	...	16,846 8 0	5,706 6 9	46 6 6	...	22,599 5 3
b. Firewood and charcoal	...	4,159 14 0	5,199 8 0	227 12 10	...	9,586 13 10
c. Bamboos	...	6,432 2 3	6,591 9 9	23 5 6	...	13,047 1 6
d. Grazing and fodder grass	...	6,220 14 6	8,094 6 0	1,019 14 [illegible]	...	15,335 3 0
e. Other minor produce	...	2,440 8 6	5,860 2 0	200 2 0	...	8,500 12 6
III.—Confiscated, drift and waif wood ...	...	716 9 0	...	20 3 0	2 0 0	738 12 0
IV.—Revenue from forests not managed by Government :—						
a. Duty on foreign timber and other forest produce,	...	...	...	...	...	...
b. Revenue from shared and private forests ...	...	...	...	...	...	...
V.—Miscellaneous :—						
a. Fines and forfeitures	...	240 12 3	32 14 0	130 10 9	10 4 0	414 9 0
b. Refunds	...	35 0 0	14 10 8	135 12 4	...	185 7 0
c. Other sources	...	100 15 9	5 3 6	603 12 9	...	710 0 0
Total, Receipts ...	...	41,481 15 6	31,504 7 8	43,875 3 9	1,70,580 4 0	2,87,441 14 11
EXPENDITURE.						
A.—CONSERVANCY AND WORKS.						
I.—Timber and other produce removed from the forests by Government Agency :—						
a. Timber	...	509 7 4	5 0 0	20,467 13 0	63,210 8 3	84,192 12 7
b. Firewood and charcoal	...	406 8 7	...	12,670 1 0	...	13,076 9 7
c. Bamboos	...	...	...	...	...	...
d. Sandal-wood	...	...	...	...	...	...
e. Grass and other minor produce... ...	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers.	...	29 10 0	4,024 10 4	...	...	4,054 4 4
III.—Confiscated, drift and waif wood ...	...	2 8 0	...	...	...	2 8 0
IV.—Revenue from forests not managed by Government :—						
a. Duty on foreign timber and other forest produce	...	...	...	...	...	...
b. Revenue from shared and private forests ...	...	...	...	...	...	...
V.—Rent of leased forests and payments to shareholders in forests managed by Government.	...	1,851 0 0	...	4,500 0 0	2,153 0 0	8,504 0 0
VI.—Live-stock, stores, tools and plant :—						
a. Purchase of cattle	...	...	...	...	...	...
b. Feed and keep of cattle	...	1,260 8 2	722 7 5	195 14 11	...	2,178 14 6
c. Stores, tools and plant	504 0 3	109 3 3	224 14 0	53 14 0	7 8 0	899 7 6
VII.—Communications and Buildings :—						
a. Roads and bridges	...	1,3[illegible]4 5 6	366 12 11	5,899 8 10	0 4 0	7,080 15 3
b. Buildings	26,060 4 0	361 10 1	447 15 0	683 5 4	19 5 0	27,572 7 5
c. Other works	...	...	...	16 1 4	...	16 1 4
VIII.—Demarcation, improvement and extension of forests :—						
a. Demarcation	...	375 0 0	82 9 0	61 12 0	2 0 0	521 15 0
b. Compensation for land and rights ...	...	...	...	35 6 4	...	35 6 4
c. Surveys and working-plans	...	47 2 0	...	538 1 11	184 3 0	769 6 11
d. Plantations	...	...	44 7 0	...	...	44 7 0
e. Protection from fire...	...	2,596 6 11	1,020 12 7	574 4 6	381 3 0	4,572 11 0
f. Other works	...	454 1 4	550 12 2	3,313 10 4	2 13 0	4,321 4 10
IX.—Miscellaneous :—						
a. Refunds	...	...	...	...	...	...
b. Law charges	...	11 12 0	0 8 3	...	...	12 4 3
c. Other charges	86 15 0	525 9 1	78 6 9	607 6 0	321 1 6	1,619 6 4
Total, A.—Conservancy and Works ...	26,651 3	9,854 12 3	7,569 3 5	49,117 3 6	66,282 7 9	1,59,474 14 2
B.—ESTABLISMENTS.						
I.—Salaries:—						
a. Conservators	12,000 0 0	...	...	...	...	12,000 0 0
b. Superior officers	690 0 0	11,700 0 0	8,400 0 0	13,243 5 4	856 7 3	34,889 12 7
c. Subordinate forest and depôt establishments,	3,092 11 10	3,191 11 3	1,747 15 6	3,860 9 3	531 7 9	12,424 7 7
d. Office establishments	3,786 10 8	1,308 0 0	888 11 3	1,337 3 1	180 0 0	7,500 9 0
e. Deputation and special allowances ...	...	...	...	...	...	...
II.—Travelling allowances :—						
a. Conservators	2,043 10 0	...	...	...	...	2,043 10 0
b. Superior officers	...	1,613 0 0	1,593 0 0	2,919 7 8	324 0 0	6,449 7 8
c. Subordinate forest and depôt establishments,	620 6 3	...	...	3 3 0	...	623 9 3
d. Office establishments	...	52 5 2	60 12 4	498 7 2	61 13 10	673 6 6
III.—Contingencies :—						
a. Stationery	11 15 3	105 9 0	34 12 6	52 8 0	7 8 0	212 5 3
b. Carriage of tents and records	93 6 2	225 11 11	231 2 8	164 5 0	17 2 0	731 11 9
c. Rents, rates and taxes	23 11 4	360 0 0	325 0 0	0 6 0	...	709 1 4
d. Pay of police guards	...	...	...	...	...	...
e. Official postage	221 10 6	71 15 0	137 1 0	80 6 0	8 8 0	519 8 6
f. Sundries	141 13 0	74 4 6	113 6 11	179 2 10	48 9 0	560 4 3
Total, B.—Establishments ...	22,728 15 0	18,702 9 4	13,531 14 2	22,338 15 4	2,035 7 10	79,337 13 [illegible]
GRAND TOTAL OF EXPENDITURE ...	49,380 2 3	28,557 5 7	21,101 1 7	71,456 2 10	68,317 15 7	2,38,8[illegible]2 11 1[illegible]

FORM No. 50.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Account Current for the year 1879-80.

Dr.

	Rs. a. p.	Rs. a. p.
To Cash Book on 1st April, 1879.	...	11,303 4 11
To REVENUE RECEIVED :—		
In cash	81,332 11 8	
Book transfer	2,06,109 3 3	2,87,441 14 11
„ REMITTANCES FROM STATE TREASURIES	...	2,81,076 2 7
„ REMITTANCES FROM OTHER DEPARTMENTS :—		
Public Works Department	6,920 2 4	
Military Department, Bengal	41 5 2	6,961 7 6
„ CONTRIBUTIONS TO FUNDS :—		
Military Fund	189 0 0	
Orphan Fund	157 8 0	346 8 0
„ ADVANCES RECOVERABLE	...	1,27,916 6 3
„ GOVERNMENT OF INDIA :—		
Bank of Bengal, Calcutta	20,000 0 0	
Mathematical Instrument Department	86 12 0	20,086 12 0
Total	...	7,35,132 8 2

	Rs. a. p.	Rs. a. p.
By Expenditure under A.	1,59,474 14 2	
„ B.	79,337 13 8	2,38,812 11 10
By Revenue remitted to State Treasuries	79,394 7 0	
„ ditto adjusted by Book transfer	2,06,102 3 3	2,85,493 10 3
„ Advances recoverable	...	2,05,816 6 9
„ Government of Punjab	...	15 0 0
29—*Miscellaneous* :—		
„ Reward for proficiency in oriental languages ...	...	360 0 0
„ Cash balance on 31st March, 1880	...	4,633 11 4
Total	...	7,35,132 8 2

FORM No. 51.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Statement of Outstandings and Liabilities on account of Contractors and Disbursers, 1879-80.

Division.	Department Debtor.			Department Creditor.			Balance Due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction ...	...	8,317 14 0	8,317 14 0	268 0 0	8,616 3 0	8,884 3 0	566 5 0	...	
Dehra Dún ...	...	551 3 1	(a.) 551 3 1	...	540 0 0	540 0 0	16 10 8	27 13 9	
Tons	...	60,674 11 3	60,674 11 3	1,560 10 9	(b) 1,58,656 1 10	1,60,216 12 7	99,542 1 4	...	Division formed from December, 1879.
Jaunsár ...	...	58,400 7 8	58,400 7 8	21,579 6 9	37,946 0 11	59,525 7 8	1,125 0 0	...	
Sahárunpur ...	...	...	...	...	58 1 0	...	58 1 0	...	
Total ...	...	1,27,944 4 0	(a.) 1,27,944 4 0	23,408 1 6	2,05,816 6 9	2,29,224 8 3	1,01,308 2 0	27 13 9	

(a.) Includes Rs. 27-13-9, liabilities on account of work done, not credited in the cash account under "advances recoverable."
(b.) Total Rs. 23,140-1-6 shown in last annual return against Jaunsár Division.

FORM No. 52.—(*Prescribed*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Statement of outstandings on account of Revenue, 1879-80.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction Division	Sale of timber, &c., &c.	...	...	...	...	...	
Dehra Dún Ditto	Ditto, ditto	2,415 11 0	41,981 15 6	44,397 15 6	41,481 15 6	2,915 11 0	
Saháranpur Ditto	Ditto, ditto	...	31,504 7 8	31,504 7 8	31,504 7 8	...	
Jaunsár Ditto	Ditto, ditto	...	44,020 1 10	44,020 1 10	43,875 3 9	144 14 1	
Tons Ditto	Ditto, ditto	...	1,70,580 4 0	1,70,580 4 0	1,70,580 4 0	...	
	Total ...	2,415 11 0	2,88,086 13 0	2,90,502 8 0	2,87,441 14 11	3,060 9 1	

FORM

FOREST DEPARTMENT, N.-W. PROVINCES

Statement of trees felled

Division.	Forest Range.	Locality.	Description of trees.	On hand from previous year. No.	On hand from previous year. C. ft.	Felled during current year. No.	Felled during current year. C. ft.
Dehra Dún.	Eastern Dún ...	Bulawála ...	Sál trees ...	1,000	3,000	3,000	26,000
			„ poles ...	12,000	46,725	...	...
			Kokát trees ...	505	5,050	...	...
		Nágsidh ..	Sál „ ...	...	...	32	1,383
		Thano ...	Sál „ ...	...	...	25	626
			Total ...	13,505	54,775	3,057	38,009
Saháranpur.	Eastern Siwálik,	Lakarkot ...	Sál trees ...	...	...	400	1,200
		Do. ...	Sál saplings ...	...	...	807	200
		Do. ...	Kokát trees ...	...	...	80	240
		Do. ...	Kokát saplings ...	...	...	187	47
		Ganjarban ...	Sál trees ...	...	...	543	543
		Do. ...	Kokát „	...	...	1,500	1,500
		Various ...	Sál „	...	...	4,423	5,194
		Do. ...	Sain „	...	...	1 060	2,755
		Do. ...	Kokát „	...	...	243	765
		Do. ...	Khair „	...	...	2,823	8,253
			Total ...	...	...	12,006	20,697
Jaunsár.	Deoban Range ...	Bhujkoti ...	Deodar trees ...	202	24,745	...	...
	Karámba Forest...	Páni-ki-nál ...	Do. „ ...	225	25,467	...	...
	Do. ...	Konain ...	Kail „ ...	50	7,190	...	...
	Deoban Range ...	Kanjátra ...	Oak „ ...	...	...	11	1,150
	Do. ...	Do. ...	Fir „ ...	...	...	242	25,000
	Do. ...	Mohna ...	Oak „ ...	...	...	17	1,400
	Do. ...	Do. ...	Fir „ ...	...	...	105	12,900
	Deota Range ...	Thadiár ...	Chir „ ...	...	...	23	1,150
			Total ...	477	57,402	398	41,600
Tons.	Deota ...	Temple and Dopta Blocks.	Deodar trees (green)...	...	...	317	31,700
			Ditto (dry) ...	...	...	225	22,500
	Raiengarh ...	... ...	Ditto (green) ..	...	...	2,141	239,700
			Total ...	...	...	2,683	293,900
			Total ...	13,982	1,12,177	18,204	394,206

Abstract of

Description of trees.	1st class. 6' in girth.	2nd class. 6'—4½' in girth.	3rd class. 4½'—3' in girth.
Sál	57	1,000	2,266
Fir	...	347	...
Oak	...	28	...
Sain and Khair ...	...	...	883
Kokat ...	...	4	1,000
Deodar ...	2 683	...	...
Chir ...	23	...	...
Total of each class.	2,763	1,379	4,149

No. 53.—(*Suggested*).

AND OUDH (SCHOOL CIRCLE).

during the year 1879-80.

Total.		Disposed of during current year.			Closing balance.		Remarks.
No.	C. ft.	How disposed of.	No.	C ft.	No.	C. ft.	
4,000	39,000	Removed by purchasers, converted, and carried to depôt, &c.	4,000	39,000	...	...	
12,000	46,725		9,500	44,204	2,500	2,521	
505	5,050		...	...	505	5,050	
32	1,383		32	1,383	...	...	
25	626		25	626	...	...	
16,562	92,784	...	13,557	85,213	3,005	7,571	
400	1,200	Auctioned in forest ...	400	1,200	...	...	
807	200		807	200	...	...	
80	240		80	240	...	...	
187	47		187	47	...	...	
543	543		543	543	...	...	
1,500	1,500		1,500	1,500	...	...	
4,423	5,194	Sold by passes ...	4,423	5,194	...	...	
1,060	2,755		1,060	2,755	...	...	
243	765		243	765	...	...	
2,823	8,253	Sold at chaukis ...	2,823	8,253	...	...	
12,066	20,697	...	12,066	20,697	...	...	
202	24,745	...	...	...	202	24,745	
225	25,467	...	...	...	225	25,467	
50	7,190	Sawn into scantlings ...	50	7,190	...	...	
11	1,150	Cut into fuel ...	11	1,150	...	...	
242	25,000		242	25,000	...	...	
17	1,400		17	1,400	...	...	
105	12,900		105	12,900	...	...	
23	1,150	Sawn up ...	23	1,150	...	...	
875	99,002	...	448	48,790	427	50,212	
317	31,700	...	...	...	317	31,700	
225	22,500	...	...	...	225	22,500	
2,141	239,700	Sawn up ...	2,141	239,700	...	...	
2,683	293,900	...	2,141	239,700	542	54,200	
32,186	506,383	...	28,212	394,400	3,974	111,983	

Form No. 53.

4th class. 3'—1½' in girth.	*5th class.* Under 1½'	Total of each kind of tree.	Remarks.
2,100	3,807	9,230	All removed as thinnings.
...	...	347	
...	..	28	
2,000	1,000	3,883	
819	187	2,010	
...	...	2,683	Mature crop.
...	...	23	
4,919	4,994	18,204	

FORM No. 54.—(*Suggested*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Statement of logs, sleepers and other scantlings cut and exported during the year 1879-80.

Division.	Forest Range.	Locality.	Description of timber and scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.	
				No	C. ft.	No.	ft.	No.	C. ft.	How disposed of.	No.	C. ft	No.	C. ft.
Dehra Dún...	Eastern Dún ...	Bulawála ...	Sál karis	1,267	1,820	1,151	1,656	2,418	3,476	Carried to depôt ...	2,418	3,476	...	...
			„ tors	...	...	500	1,500	500	1,500	...	500	1,500	...	...
			„ ballis	...	...	4,000	3,793	4,000	3,793	...	4,000	3,793	...	...
		Nágsidh ...	„ beams	...	...	28	216	28	216	...	28	216	...	...
		Thano ...	„ ditto	...	...	9	61	9	61	...	9	61	...	...
			Total ...	1,267	1,820	5,688	7,226	6,955	9,046	...	6,955	9,046	...	...
Sahárunpur ...	„	...	...				*Nil.*							
Jaunsár ...	Karámba ...	Konain	Deodar planks ...	...	...	15	48	15	48	Chakráta depôt ...	15	48	...	...
	Kálsi ...	Kálsi	Sal ballis	...	...	37	95	37	95	Ditto	37	95	...	...
	Deoban ...	Kanjátra and Mohna,	Fir fuel	...	36,000	...	37,900 *1,280	...	75,980	Ditto	...	43,480	...	32,500
			Oak „	...	50,560	...	2,550	...	53,110	Ditto	...	46,760	...	1,550
										Loss and shrinkage ...	...	4,780		
	Karámba ...	Konain ...	Blue pine karis ...	...	...	622	913	622	913	Chakráta depôt ...	674	900	...	...
										Lost	8	13		
			„ „ „ planks ...	...	...	733	562	733	562	Chakráta depôt ...	733	562	...	...
			Total ...	...	87,360	1,407	43,348	1,407	130,708	...	1,407	96,658	...	34,050

				DEODAR SLEEPERS.											
Tons ...	Deota ...	Partil Temple and Dopta.	Broad gauge ...	22,157	76,934	...	...	22,157	76,934	Agra depôt ...	16,729	58,[illegible]	55	191
										Delhi „ ...	4,560	1[illegible]		
										Lost and broken ...	813	2,823		
	Raiengarh ...	...	Ditto (II class),	...	...	16	55	16	55	...	...	...	16	55
	Deota ...	Partil Temple and Dopta.	Broad gauge ...	...	...	47,500	164,930	47,500	164,930	...	...	...	47,500	164,930
			Metre gauge ...	7,294	9,725	14,672	24,429	21,966	34,154	Delhi depôt ...	21,231	32,929	735	1,225
			Ditto (II class)...	...	...	245	327	245	327	...	...	...	245	327
	Raiengarh ...	...	Metre gauge ...	...	...	44,850	74,750	44,850	74,750	Delhi depôt ...	29,814	49,690	15,036	25,060
	Deota ...	Thadiár ...	Chir beams ...	...	...	37	208	37	208	...	...	...	37	208
			„ karis ...	...	...	21	28	21	28	...	...	...	21	28
			„ shikanjas ...	...	...	114	868	114	868	Slide ...	14	98	100	770
		Deota ...	Deodar pieces ...	...	...	37	37	37	37	...	...	...	37	37
			„ beams ...	...	...	20	194	20	194	Delhi depôt ...	4	40	16	154
			Total ...	29,451	86,659	107,512	265,826	136,963	352,485	...	73,165	159,500	63,798	192,985
			GRAND TOTAL ...	30,718	175,839	114,607	316,400	145,325	492,239	...	81,527	265,204	63,798	227,035

Summary.	Sál karis	...	...	1,151	1,656
	„ ballis and beams ..	...	...	4,074	4,165
	„ tors	...	...	500	1,500
	Deodar sleepers (broad gauge)	...	...	47,516	164,985
	Ditto (metre gauge)	...	...	59,767	99,506
	Deodar (other kinds) ...	...	...	72	279
	Chir	...	...	172	1,104
	Blue pine	...	...	1,355	1,475
	Oak fuel, 2,550, Fir fuel, 39,180	...	...	...	41,730
		Total	...	114,607	316,400

Gained on restacking.

FORM No. 55.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Statement of timber and other produce brought to depôt from the different Forest Divisions, 1879-80.

Division.	Forest.	Description of timber, &c.	No. of Pieces.	No. of C. ft.	Total of each Division. Pieces.	Total of each Division. C. ft.	Remarks.
DEHRA DÚN...	Bulawála ...	Sál karis ...	2,310	3,326			Including sál poles, 300 843 included in Form 53, but not shown in Form 54.
		Damaged sál karis ...	108	150			
		Sál tors ...	500	1,500			
		„ ballis ...	4,000	3,793			
		„ poles ...	300	844			
	Nágsidh ...	„ beams ...	37	276			
					7,255	9,889	
	Bulawála ...	Charcoal, maunds ...	...	...	...	298	
SAHÁRANPUR...	...	*Nil*	...	...	...	...	
JAUNSÁR ...	Karámba ...	Deodar karis ...	15	48			
		Blue pine karis ...	614	900			
		„ planks ...	733	562			
	Kanjátra and Mohna.	Oak fuel ...	...	46,780			
		Fir „ ...	...	43,480			
	Kálsi ...	Shisham planks ...	15	19			
		Tun „ ...	10	3			
		Sál ballis ...	37	95			
	Cantonment ...	Oak fuel ...	...	174			
	(Waif wood) ...	Deodar beams ...	19	185			
					1,443	92,246	
TONS ...	Deota ...	Deodar sleepers (broad gauge.)	21,289	73,920			
		Deodar sleepers (metre gauge.)	21,231	32,929			
	Raiengarh and Dádi.	Ditto ...	29,814	49,690			
	Dátmir ...	Deodar beams ...	4	40			
					72,338	156,579	

ABSTRACT.

Sál	7,292	9,984			
Deodar sleepers	72,334	156,539			
„ (various)	38	273			
Blue pine	1,347	1,462			
Shisham	15	19			
Tun	10	3			
Fuel ... Oak	...	46,954			
Fuel ... Fir	...	43,480			
Total ...			81,036	258,714	
Total ... Charcoal, maunds ...	...	...	...	298	

FORM No. 56.—(*Prescribed.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Account of Timber and other produce, 1879-80.

Particulars.		Pieces. No.	Pieces. Cubic feet.	Total. No.	Total. Cubic feet.
Balance in hand at commencement of year.					
Dehra Dún ...	Sál karis	1,051*	1,522		
	„ other kinds	17,229	12,343		
	Timber, all other kinds ...	199	936	18,479	14,801
Saháranpur		*Nil.*			
Jaunsár	Deodar timber (all kinds) ...	48,908	121,209		
	Rai ditto (ditto) ...	3,706	3,832	52,614	125,041
	Fuel... Oak	...	52,435		
	Fuel... Fir	...	52,640		105,075
Tons		*Nil.*			
	Total	...	...	71,093	244,917
Received during the year.					
Dehra Dún ...	Sál karis	2,418	3,676		
	„ beams	37	276		
	„ other kinds...	4,800	6,137	7,255	9,889
	Charcoal, maunds	298	...	298	
Saháranpur		*Nil.*			
Jaunsár	Deodar timber (all kinds) ...	34	233		
	Sál	37	95		
	Kail timber (all kinds) ...	1,347	1,462		
	Tún	10	3		
	Shisham	15	19	1,443	1,812
	Fuel... Oak	...	46,954		
	Fuel... Fir	...	43,480		90,434
Tons	Deodar sleepers (broad gauge) ...	21,289	73,920		
	„ „ (metre gauge) ...	51,045	82,619		
	„ beam of sizes	4	40	72,338	156,579
	Total ...	... Charcoal	... (maunds) ...	81,036 298	258,714
SUMMARY OF RECEIPTS.					
Balance in hand at commencement of year.					
Timber		71,093	139,842		
Fuel		...	105,075		
Recieved during the year.					
Timber		81,036	168,280		
Fuel		...	90,434		
Charcoal (maunds)		298	...		
	Total ...	... Charcoal	... (maunds) ...	152,129 298	503,631

* All but 66 of these pieces were wrongly classified under "Timber, other kinds" in last year's statement.

FORM No. 56.—(*concluded*).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE).

Account of Timber and other produce, 1879-80.

Particulars.		Pieces. No.	Pieces. Cubic feet.	Total. No.	Total. Cubic feet.
	Removed by purchasers.				
Dehra Dún ...	Sál karis ...	3,469	4,998		
	„ other kinds ...	10,732	11,289		
	Timber, all other kinds ...	34	661	14,235	16,948
Saháranpur ...	...	...	*Nil.*		
Jaunsár ...	Deodar timber (all kinds) ...	11,141	18,004		
	Sál ballis ...	37	95		
	Rai timber (all kinds) ...	554	634		
	Kail „ („) ...	1,321	1,427		
	Shisham („) ...	4	5	13,057	20,165
	Fuel... Oak ...	...	45,627		
	Fir ...	...	67,870	...	113,497
Tons ...	Deodar sleepers (broad gauge) ...	17,638	61,243		
	„ „ (metre gauge) ...	50,000	80,877		
	„ beams of sizes ...	4	40	67,642	142,160
	Total ...	...	...	94,934	292,770
	Lost or used by the Department.				
	Written off.				
Jaunsár ...	Deodar timber (all kinds) ...	29,099	85,966	29,099	85,966
	Lost or broken.				
	Deodar timber (all kinds) ...	78	130	78	130
	Dryage.				
	Fuel... Oak ...	...	13,812		
	Fir... ...	...	4,240	...	18,052
	Used by Department				
	Shisham planks ...	3	4		
	Tún „ ...	10	3	13	7
	Total ...	...	...	29,190	104,155
	Balance in hand at close of the year.				
Dehra Dún ...	Sál beams ...	37	276		
	„ other kinds ...	11,297	7,191		
	Timber, all other kinds ...	165	275	11,499	7,742
	Charcoal, maunds ...	298	...	298	
Saháranpur ...	...	...	*Nil.*		
Jaunsár ...	Deodar timber (all kinds) ...	8 624	17,842		
	Rai „ („) ...	3,152	3,198		
	Shisham planks ...	8	10		
	Kail karis ...	26	35	11,810	20,585
	Fuel... Oak ...	...	39,950		
	Fir ...	...	24,010	...	63,960
Tons ...	Deodar sleepers (broad gauge) ...	3,651	12,677		
	„ „ (metre gauge) ...	1,045	1,742	4,696	14,419
	Total ...	... Charcoal	... (maunds) ...	28,005 298	106,706
	SUMMARY OF ISSUES.				
	Removed by purchasers.				
Timber ...		94,934	179,273		
Fuel ...		...	113,497		
	Otherwise removed				
Timber ...		29,190	86,103		
Fuel ...		...	18,052		
	Balance in hand at close of year.				
Timber ...		28,005	42,746		
Fuel ...		...	63,960		
Charcoal (maunds)		298	...		
	Total ...	...	... Maunds	152,129 298	503,631

FORM No. 59.—(*Suggested.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Statement showing the Revenue derived from, and Expenditure incurred on, Timber and other produce sold to Public Departments from Depôt, during the year 1879-80.

Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost to Forest Department. Timber expenses under A. I.	Cost to Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost to Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.
			Rs. a.		Rs. a. p.							
Jaunsár Division.												
Commissariat Department, Chakráta.	Oak fuel ...	26,120′	22 0	%c.ft.	5,746 0 0							
	Ditto ...	13,208′	20 0	Ditto	2 642 0 0							
	Fir fuel ...	26,100′	15 0	Ditto	3,915 0 0							
	Ditto ...	38,980′	19 11	Ditto	6,505 0 0							
	Mixed fuel ...	174′	10 5	Ditto	18 0 0	18,826 0 0	...	12,670 0 0	5,040 0 0	17,710 0 0	1,116 0 0	...
Executive Engineer, Chakráta Division, Military Works.	Deodar karis ...	672= 1,914′	1 8	c. ft.	2,871 0 0							
	Ditto planks ...	7= 6′	Ditto	Ditto	9 0 0							
	Rai karis ...	175= 365′	1 1	Ditto	365 0 0	3,245 0 0	...	1,998 0 0	966 0 0	2,964 0 0	281 0 0	...
Sindia State Railway ...	Deodar sleepers 15′ ...	135= 704′	7 0	Each.	945 0 0							
	Do. do. (broad gauge,)	2,419= 8,399′	4 0	Ditto	9,676 0 0							
Rájputána ditto	Do. do. (metre gauge.)	1,074= 1,770′	2 0	Ditto	2,148 0 0	12,769 0 0	...	31,362 0 0	27,659 0 0	59,021 0 0	24,300 0 0	...
Tons Division.												
Sindia State Railway ...	Do. do. (broad gauge.)	17,538=61,243′	4 0	Ditto	70,552 0 0	70,552 0 0	...					
Western Rájputána State Railway (Northern Section).	Do. do. (metre gauge.)	50,000=80,877′	2 0	Ditto	1,00,000 0 0	1,00,000 0 0	...	36,425 0 0	438 0 0	36,863 0 0	63,137 0 0	...
		Total ...	...	...	2,05,392 0 0	2,05,392 0 0	...	82,455 0 0	34,103 0 0	1,16,558 0 0	88,834 0 0	...
Summary.												
Commissariat Department ...	Fuel ...	104,582′	...	...	18,826 0 0	18,826 0 0	...	12,670 0 0	5,040 0 0	17,710 0 0	1,116 0 0	...
Chakráta Division, Military Works.	Deodar karis ...	672= 1,914′	...	...	3,245 0 0	3,245 0 0	...	1,998 0 0	966 0 0	2,964 0 0	281 0 0	...
	Do. planks ...	7= 6′										
	Rai karis ...	175= 365′										
Sindia State Railway ...	Deodar sleepers 15′	135= 704′	...		1,83,321 0 0	1,83,321 0 0	...	67,787 0 0	28,097 0 0	95,884 0 0	87,437 0 0	...
	Do. do. (broad gauge)	20,057=69,642′										
Rájputána ditto ditto ...	Do. do. (metre gauge)	1,074= 1,770′										
Western Rájputána State Railway (Northern Section).	Do. (ditto.)	50,000=80,877′										
		Total ...	...	...	2,05,392 0 0	2,05,392 0 0	...	82,455 0 0	34,103 0 0	1,16,558 0 0	88,834 0 0	...
									Deduct surplus (or deficit) ...		...	...
									Balance for the Department ...		88,834 0 0	...

FORM No. 60.—(*Suggested.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Abstract showing the value of Timber and of Live and Dead Stock for the year 1879-80.

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
Direction Division.											
1. Surveying and other instruments ...	...	...	23	217	23	217	...	...	23	217	
2. Machinery	...	...	...	...	...	...	...	...	...	...	
3. Tools	...	...	3	11	3	11	...	...	3	11	
4. Office furniture	15	151	29	243	44	394	...	...	44	394	
5. Tents	1	100	2	200	3	300	...	...	3	300	
6. Buildings, building materials, &c. ...	...	...	6	20,035	6	20,035	...	...	6	20,035	
Total ...	16	251	63	20,706	79	20,957	...	...	79	20,957	
Dehra Dún Division.											
Sál karis	1,051	926	2,418	2,031	3,469	2,957	3,469	2,957	...	...	
„ beams	...	...	37	552	37	552	...	...	37	552	
„ other kinds	17,229	512	4,800	1,120	20,029	1,632	10,732	1,582	11,297	50	
Timber, all other kinds	199	260	...	...	199	260	34	250	165	10	
Charcoal (maunds)	...	...	298	119	298	119	...	...	298	119	
	18,479	1,698	7,553	3,822	26,032	5,520	14,235	4,789	11,797	731	
1. Surveying and other instruments ...	12	121	4	37	16	158	...	...	16	158	
2. Machinery	...	...	...	...	...	...	...	...	...	...	
3. Tools	1,089	455	77	46	1,166	501	...	...	1,166	501	
4. Office furniture	29	276	1	7	30	283	...	...	30	283	
5. Tents	5	722	...	...	5	722	...	361	5	361	
6. Building materials, &c.	22	336	5	1,012	27	1,348	...	...	27	1,348	
7. Miscellaneous	119	188	...	...	119	188	1	3	118	185	
Elephants...	1	2,800	1	2,000	2	4,800	...	...	2	4,800	
...	1,377	3,898	88	3,102	1,365	8,000	1	364	1,364	7,63[illegible]	
Total ...	19,756	6,596	7,641	6,924	27,397	13,520	14,236	5,153	13,161	8,367	

Sahárunpur Division.										
1. Surveying and other instruments ...	3	17	1	10	4	27	...	...	4	27
2. Machinery	...	...	...	...	...	...	...	...	...	...
3. Tools	535	271	34	38	569	309	...	...	569	309
4. Office furniture	16	170	36	127	52	297	...	...	52	297
5. Tents	3	145	...	...	3	145	1	20	2	125
6. Building materials, &c.	29	1,000	1	19	30	1,019	7	171	23	848
7. Miscellaneous	107	185	30	150	137	335	...	...	137	335
Elephants	1	2,000	...	...	1	2,000	...	...	1	2,000
Total	694	3,788	102	344	796	4,132	8	191	788	3,941
Jaunsár Division.										
Deodar sleepers, karis, planks and shingles ...	48,908	97,462	44,014	65,440	92,922	1,62,902	84,298	1,45,401	8,624	17,501
Bai karis, planks and ballis	3,706	3,264	...	...	3,706	3,264	554	823	3,152	2,441
Kail karis and planks	...	...	1,347	1,858	1,347	1,858	1,321	1,833	26	25
Shisham and Tun planks	...	...	25	20	25	20	17	12	8	8
Sál ballis	...	...	37	111	37	111	37	111	...	...
Fuel ... Oak and Fir (cubic feet) ...	105,075	17,578	89,810	15,866	194,885	33,444	1,30,925	23,532	63,960	9,912
Fuel ... Mixed	...	...	174	18	174	18	174	18	...	...
	157,689	1,18,304	135,407	83,313	293,096	2,01,617	217,326	1,71,730	75,770	29,887
1. Surveying and other instruments ...	6	32	7	54	13	86	...	...	13	86
2. Machinery	5	50	3	19	8	69	5	50	3	19
3. Tools	1,512	3,622	563	1,979	2,075	5,601	1,068	3,271	1,007	2,330
4. Office furniture	29	143	7	2	36	145	14	52	22	93
5. Tents	4	230	...	...	4	230	2	80	2	150
6. Building materials, &c.	37	24,215	2	3,505	39	27,720	15	7,028	24	20,692
7. Miscellaneous	107	421	1	1	108	422	69	191	39	231
Elephants	1	2,000	...	...	1	2,000	1	2,000	...	...
	1,701	30,713	583	5,560	2,284	36,273	1,174	12,672	1,110	23,601
...	159,390	1,49,017	135,990	8,873	295,380	2,37,890	218,500	1,84,402	76,880	53,488
Tons Division.										
Deodar sleepers and beams	...	...	72,338	1,87,262	72,338	1,87,262	67,642	1,70,568	4,696	16,694
1. Surveying and other instruments ...	...	...	3	24	3	24	...	...	3	24
2. Machinery	...	...	5	40	5	40	...	...	5	40
3. Tools	...	...	855	2,694	855	2,694	...	...	855	2,694
4. Office furniture	...	...	17	60	17	60	...	...	17	60
5. Tents	...	...	2	40	2	40	...	...	2	40
6. Building materials, &c.	...	...	14	4,710	14	4,710	...	...	14	4,710
7. Miscellaneous	...	...	35	82	35	82	...	...	35	82
	...	...	931	7,650	931	7,650	...	...	931	7,650
Total ...	...	...	73,269	1,94,912	73,269	1,94,912	67,642	1,70,568	5,627	24,344

FORM No. 60.—(*Suggested.*)

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH (SCHOOL CIRCLE.)

Abstract showing the value of Timber and of Live and Dead Stock for the year 1879-80.—(concluded.)

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
Summary.		Rs.		Rs.		Rs.		Rs.		Rs.	
Timber of all kinds (pieces)	71,093		81,036		152,129		124,124		28,005		
Fuel (cubic feet)	105,075	1,20,002	90,434	1,46,779	195,509	2,66,781	131,549	2,19,469	63,960	47,312	
Charcoal (maunds)	...		298		298		...		298		
1. Surveying and other instruments ...	21	170	38	342	59	512	...	...	59	512	
2. Machinery	5	50	3	19	8	69	...	10	8	59	
3. Tools	3,136	4,348	677	2,074	3,813	6,422	213	577	3,600	5,845	
4 Office furniture	89	740	76	387	165	1,127	...	...	165	1,127	
5. Tents	13	1,197	2	200	15	1,397	1	421	14	976	
6. Building materials, &c.	88	25,551	14	24,571	102	50,122	8	2,489	94	47,633	
7. Miscellaneous	333	794	31	151	364	945	35	112	329	833	
Elephants	3	6,800	...	...	3	6,800	...	...	3	6,800	
Total	179,856	1,59,652	172,609	1,74,523	352,465	3,34,175	255,930	2,23,078	96,535	1,11,097	

Note—Difference in value at commencement and close of the year, Rs. 48,555—against the year.

Inter-divisional transfers have been excluded from the Summary.—

APPENDIX A.

DEHRA DÚN DIVISION.

EASTERN SIWÁLIK FOREST, BULAWALA BLOCK.

Statement of results of valuation surveys made during 1879-80.

No. of compartments.	Area in acres.	Number of trees counted.							Description of compartment whether completed.	Remarks.
		Sál (Girth classes).					Trees of other kinds.	Total.		
		I. Above 6′	II. 4½′ to 6′	III. 3′ to 4½′	IV. 1½ to 3′	V. 9″ to 1½′				
23	320	37	537	3,058	4,918	1,940	154	10,644	Not completed.	The trees of "other kinds" were all over 15 inches in girth.
21	320	14	329	2,859	4,426	2,012	290	9,930		
19	320	9	119	2,680	3,000	1,777	144	7,729		
17	320	6	115	2,298	5,491	2,000	148	10,058		
15	320	7	111	2,111	5,028	2,500	168	9,925		
13	320	6	132	1,732	3,982	3,300	1,452	10,604		
Total,	1,920	79	1,343	14,738	26,845	13,529	2,356	58,890		

APPENDIX B.

JAUNSÁR DIVISION.

EKRA FOREST—HAJÁWA BLOCK.

Statement of results of valuation surveys made during 1879-80.

Number of compartments.	Areas in acres.	NUMBER OF TREES COUNTED.																									Description of compartments.	Remarks.
		FIR (GIRTH CLASSES.)						PINE (GIRTH CLASSES.)						OAK (GIRTH CLASSES.)						DEODÁR (GIRTH CLASSES.)						Grand total trees.		
		I. Over 10 feet.	II. 8 to 10 feet.	III. 6 to 8 feet.	IV. 4 to 6 feet.	V. 2 to 4 feet.	Total.	I. Over 10 feet.	II. 8 to 10 feet.	III. 6 to 8 feet.	IV. 4 to 6 feet.	V. 2 to 4 feet.	Total.	I. Over 10 feet.	II. 8 to 10 feet.	III. 6 to 8 feet.	IV. 4 to 6 feet.	V. 2 to 4 feet.	Total.	I. Over 10 feet.	II. 8 to 10 feet.	III. 6 to 8 feet.	IV. 4 to 6 feet.	V. 2 to 4 feet.	Total.			
1	78	15	100	323	841	1,143	2,422	...	...	2	61	199	262	6	28	145	431	598	1,208	...	...	3	13	38	54	3,946		
2	160	44	322	1,005	1,791	1,135	4,297	...	...	1	21	59	81	5	18	127	384	434	968	...	...	4	10	22	36	5,382		
3	91	55	331	1,331	3,014	3,296	8,027	...	...	...	3	48	51	1	3	33	105	214	356	...	1	1	8	13	23	8,457		
4	127·5	30	234	688	1,505	1,921	4,378	...	...	...	18	51	69	5	33	166	718	1,375	2,297	...	...	9	32	57	98	6,842		
Total ...	396·5	144	987	3,347	7,151	7,495	19,124	...	...	3	103	357	463	17	82	471	1,638	2,621	4,829	...	1	17	63	130	211	24,627		

Abstract showing cubic contents of standing crop.

	Firs.	Pine.	Oak.	Total.
Compartment ... 1	231,627	8,206	29,585	269,418
" 2	617,569	2,674	24,290	644,533
" 3	985,242	1,415	7,225	993,882
" 4	505,419	2,298	46,040	553,757
Totals	2,339,857	14,593	107,140	2,461,590

APPENDIX C.

TONS DIVISION

DEOTA FOREST.

Statement of results of valuation surveys, made during 1879-80 *and previous years.*

Block and No. of Compartment.	Area in acres.	Number of trees counted. Deodar (girth classes). I. 12 to 16 feet.	II. 9 to 12 feet.	III. 6 to 9 feet.	IV. 3 to 6 feet.	Total.	Description of compartment.	Remarks.
Partil.								
1	1,354	33	86	127	119	365	Completed.	The number of trees given included all green trees including those which are unsound and those which are situated in precipitous ground.
2		98	302	702	815	1,917		
3		107	249	874	1,114	2,344		
4		30	72	230	406	738		
5		21	62	143	136	362		
6		...	3	7	13	23		
		289	774	2,083	2,603	5,749		
Temple.								
1	354	28	115	387	550	1,080	Ditto.	
2		50	157	339	445	991		
3		46	138	399	628	1,206		
4		35	218	750	1,178	2,181		
5		40	73	116	115	344		
6		1	6	74	101	182		
		200	702	2,065	3,017	5,984		
Dopta.								
1	800	84	406	1,738	3,145	5,373	Ditto.	
2		5	41	170	347	563		
3		16	117	704	1,655	2,492		
		105	564	2,612	5,147	8,428		
Katatsch.								
1	400	0	1	3	2	6	Ditto.	
2		7	12	30	15	64		
3		14	38	80	88	220		
4		76	175	449	382	1,082		
5		54	316	1,639	3,771	5,780		
		151	542	2,201	4,258	7,152		
Jaurási.								
1	559	0	3	9	17	29	Ditto.	
2		13	50	63	59	185		
3		30	136	672	662	1,500		
4		69	305	1,575	2,673	4,522		
5		72	331	1,607	2,271	4,341		
6		9	81	422	844	1,356		
		193	966	4,348	6,426	11,933		
Kánga.								
1	321	42	279	1,056	1,239	2,616	Ditto.	
2		5	25	152	290	472		
3		12	108	724	1,640	2,484		
4		53	128	566	487	1,234		
5		11	16	43	30	100		
		123	556	2,541	3,686	6,906		
Patángni.								
1	716	19	77	189	237	522	Ditto.	
2		103	514	2,006	3,097	5,720		
3		210	578	1,987	3,592	7,367		
4		74	128	201	183	586		
5		...	...	5	3	8		
		406	1,297	4,388	7,112	13,203		
Kimári.								
1	968	110	430	1,012	1,457	3,009	Ditto.	
2		16	17	47	76	156		
		126	447	1,059	1,533	3,165		
Grand Total of Deota Forest.	4,972	1,593	5,848	21,297	33,782	62,520		

APPENDIX D.

TONS DIVISION.

BÁMSU AND PART OF KOTIGÁDH.

Statement of results of valuation surveys made during 1879-80.

Blocks and number of Compartments.	Area in acres.	Number of trees counted — Deodár (girth classes). I. 12 to 15 ft.	II. 9 to 12 ft.	III. 6 to 9 ft.	IV. 3 to 6 ft.	Total.		Description of Compartments.
Bámsu.				*Bámsu.*				
1 ...	240	180	586	784	892	2,442		
2 ...	205	140	257	408	395	1,200		
3 ...	136	32	133	202	256	623		
		352	976	1,394	1,543	...	4,265	
		Girth classes. I. 6 ft. & over.	II. 4½ to 6 ft	III. 3 to 4½ ft.				
Dinkari.								
1 ...	200	2,663	667	899	...	4,229		
2 ...	320	4,344	1,822	2,512	...	8,678		
3 ...	150	83	57	51	...	191		
		7,090	2,546	3,462	...	13,098		
Pipal.								
1 ...	360	3,411	924	1,391	...	5,726		Not made.
2 ...	270	2,069	940	1,496	...	4,505		
3 ...	220	155	117	153	...	425		
	2,101	5,635	1,981	3,040	...	10,656		
Balcha.				*Kotigádh.*				
1 ...	320	452	80	82	...	614		
2 ...	160	392	77	62	...	531		
		844	157	144	...	1,145		
Phalsu.								
1 ...	140	178	31	26	...	235		
	610	...	...	...	...	...	25,134	
					Grand Total	...	29,399	

The numbers of trees given include unsound and inaccessible trees.

APPENDIX E.

TONS DIVISION.

Chir Forests on the Tons.

Forests and blocks.	Areas in acres.	Number of Chir trees counted. Mature — Girth over 6½ feet.	Immature — Girth 6½ to 2 feet.	Total.		Remarks.
Miagádh.						
Gurar	480	7,224	8,170	15,394		
Mia	910	7,866	3,220	11,086		
					26,480	
Gurugádh.						
Badla	850	11,396	9,240	20,636		
Nanai	2,300	31,465	13,020	44,485		
Binkár	1,080	14,136	13,950	28,086		
Khirtai	1,280	17,880	14,400	32,280		
Chaugamu ...	1,220	17,646	16,320	33,966		
					159,453	
Lunigádh.						
Bárau	1,200	12,065	10,925	22,990		The results were derived from 47 linear valuation surveys the total area included in which was 288 acres.
Makurstu	1,050	6,882	23,250	30,132		
Jorian	980	7,470	23,400	30,870		
Darman	920	7,569	26,100	33,669		
					117,661	
Kunigádh & Chatirágádh.						
Bashla	1,190	7,763	33,375	41,138		
Ruássa	1,300	14,640	18,000	32,640		
Chattra	690	4,608	27,520	32,128		
Anoli	2,000	17,679	22,500	40,179		
					146,085	
Total ...	17,450	186,289	263,390	...	449,679	

APPENDIX F.

REPORT ON THE CAROB CULTIVATION AT SAHÁRANPUR FOR 1879-80.

THE first imported seeds of *Ceratonia Siliqua* were sown in the Saháranpur garden in April, 1877. A plantation consisting of about two dozen trees from that batch of seed was transplanted from the nursery in the following season, and now average from 5 to 10 feet in height with stems from 3 to 4 inches in diameter. The soil, they are planted in, consists of a light sandy loam, and is a fair representation of the soils which compose the waste lands in this district. No particular treatment was given when transplanting further than making a good-sized hole and regular waterings during dry weather for about eighteeen months after transplanting.

They are in a fine robust state of health. Some individual trees made a growth of about 5 feet last season. They have shown no signs of flowering as yet. If they make proportionately good growth this season, some may flower in the course of another year.

In the Chajuri garden, at an elevation of 4,500 feet, there are a few trees from the same batch of seed which have done equally as well as those in the Saháranpur garden. The soil there is exceedingly poor and stony, and as far as appearance is concerned, it is surprising that anything would live and thrive in it.

The best season for sowing the *Ceratonia* is from March to beginning of May. The seedlings for a few weeks after germinating are very succulent, and if sown just before or after the rains a very large percentage damp off. Hot winds do not seem to affect the seedlings much. If a little shade is given during the heat of the day very little loss will occur from this cause.

A new plantation of about 150 trees was planted last February, in the farm connected with the Saháranpur garden. The plants had been too long crowded together in nurseries, and could not be dug out without cutting a large number of their roots. Owing to this cause there are only about 50 per cent. now alive. Carobs should not be allowed to remain above eighteen months in nurseries. Seedlings of that age, if ordinary attention is bestowed on watering, will transplant with a loss of perhaps less than 5 per cent.

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REPORT ON THE VALUATION SURVEYS IN THE NORTH-WESTERN PROVINCES AND OUDH FOR THE YEAR 1879-80.

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REPORT ON THE VALUATION SURVEYS IN THE NORTH-WESTERN PROVINCES AND OUDH FOR THE YEAR 1879-80.

SECTION I.

Introductory.

Introductory.

By Government orders of the 29th August, 1879, the control of the valuation surveys in these provinces was vested in the Conservator of the School Circle; and Mr. Dansey, Assistant Conservator, whose division these surveys form, was attached to the School Circle.

2. Mr. Dansey has been employed continuously on work of this kind since December, 1877; but it was not until a year subsequently that the valuation surveys were constituted a special branch, and that Mr. Dansey was placed in independent charge of them. Since then he has been engaged in the Pátli Dún and Naini Tál Forests of the Central Circle, from the budget allotment of which Circle all charges on account of his work continue to be defrayed.

Scope of Mr. Dansey's work.

3. Mr. Dansey's operations comprise something more than is ordinarily understood by a "valuation survey," as he is engaged in collecting all the data requisite for the framing of a preliminary working plan; and although he has not as yet completed any working plan, the preparation of such plans for the forests in which he has been employed must now be undertaken by him, with such assistance as it may be possible to give him from the staff of officers employed in the School Circle. His division may suitably be called the "Working Plan Division," which, together with the Forest Survey establishment, completes the Forest Survey and Working Plan Branch, the organization of which was begun in 1872, but which has not hitherto attempted more than a topographical survey of the forests. The maps produced by the Forest Survey have now enabled the officer in charge of the Working Plan Division to carry out the sub-division of the forests into compartments, and the enumeration of the crop on them, which he could not have done without these maps.

SECTION II.

The Inspector-General of Forests consulted as to the method of conducting the work.

The Inspector-General of Forests consulted.

4. The Inspector-General of Forests has been consulted several times regarding the data that should be collected for framing the working plan of the Sál forests in the Mondál valley (Pátli Dún Forest), and endeavours are being made to carry out his suggestions, which may be summarized as follows. He has recommended the adoption of the following girth classes, *viz.*:—

Class.	*Girth.*
I.	6′ and upwards.
II.	from 4½′ to 6′.
III.	from 3′ to 4½′.
IV.	from 1½′ to 3′.

Mr. Dansey at one time urged that the two lower classes should be omitted; but Mr. Brandis considers that the four classes should be maintained, and he gives as his chief reason for this opinion that on account of the large number of mature stunted trees to be found in the 2nd class, it will be best to base the working plan on the

number (*i.e.*, it is presumed, on there being a sufficient supply or otherwise) of trees in the 3rd and 4th classes, and the time which they may be expected to require in order to attain 1st class size. He says that if these tracts contained any large extent of compact forest consisting of young trees and poles of the 3rd and 4th classes, it would not be necessary to enumerate them; but that this is not the case, as these classes are irregularly distributed and scanty in places, and that when making the working plan it will be desirable to know their number in each compartment with a greater degree of accuracy than can be obtained from the "description of compartments." Mr. Brandis, however, also says that if it is desired to shorten the work, the 3rd and 4th classes may be amalgamated into one class. With reference to this question, Mr. Dansey estimated that in the Mondál Forest one-fourth of the 2nd class trees have reached the age of 1st class trees; and Mr. Brandis has desired that on the completion of the valuation it should be ascertained whether this proportion holds good, and he says that the data on which this estimate was based should be examined. Mr. Dansey reports that his estimate was made by eye from a small area, and that further experience shows him that, owing to the great variety of conditions met with, it would be fruitless to attempt to determine the proportion with accuracy; but he says that there is a very considerable proportion of mature trees in the 2nd class, and (as might be expected) a comparatively small number in the 3rd class, the latter being usually of no value. It is understood that Mr. Dansey now acquiesces in the advisability of maintaining the four girth classes.

Rate of growth of the Sál tree.

5. The Inspector-General says that endeavours must be made to collect data regarding the rate of growth of the Sál tree, and he suggests that as but few trees have been felled in the forests in which Mr. Dansey is working, it will suffice to count the rings on stumps in adjacent forests. He also suggests that the plan pursued by Mr. Fisher in Assam should be tried.

Description of compartments.

6. Regarding the description of compartments, Mr. Brandis considers the tabular form hitherto in use in the North-Western Provinces to be inconvenient and objectionable, as it wastes time and paper and renders the documents unnecessarily bulky. He says that it should be drawn up in the form of a report under the prescribed headings, including past management, present condition, and prospects for future treatment; and that the prescriptions of the Code on this and other matters connected with the preparation of preliminary working plans must be duly observed. When speaking of the forests in the Bhágirathi valley, he gives the following as the principal remaining points to which the officer in charge of the work should devote his special attention.

(*a*) Gradient of slope in the different portions of each compartment.

(*b*) Average height of the trees of the larger classes in different parts of the forest.

(*c*) Localities where the forest has been damaged by fire, and its effects.

(*d*) Presence or absence of seedlings.

These are questions which relate to all forests, and they should be noted in the description of compartments. It is not known to what extent these instructions have been carried out, as the books have not yet been submitted.

Working plans.

7. Regarding the working plan, Mr. Brandis says that it must be left until all the data have been collected; but the first thing to do will probably be to fix the number of years over which the felling of the 1st and 2nd class trees (taken together) should be spread so as to give the younger classes time to grow up; the fellings in each compartment being regulated by the requirements of the forest, subject to the maximum annual yield as determine by the valuation survey. The annual fellings may extend ever one or over several

compartments, or the fellings of ten years may be made at once, no timber operations being again carried on during that period; or other methods may be adopted as convenience may suggest. He says that it will probably be better to spare all or most of the trees standing on exposed ridges or steep slopes, and to cut sparingly where the ground is poor, dry or stony; but subject to such considerations as these, the number of the larger trees that may be felled in a particular locality must be chiefly regulated by the number of trees of the smaller classes on the ground. Wherever there is a sufficient stock of the 3rd and 4th classes, a large proportion, and often the whole, of the two larger classes may be cut at once with great benefit to the forest, provided that there is a market for trees of 2nd class size. It will probably be expedient, at any rate, to cut out all stunted trees which are below 6 feet in girth at the same time with the 1st class trees, provided that they can be sold. On this subject Mr. Dansey suggests that there will be at least three fellings during the first period; only those trees of the 1st and 2nd classes which are believed to have reached their maximum size would be selected on each occasion; and that by observing this rule of selection Mr. Brandis's proposal will admit of every tree being felled when it can no longer be profitably allowed to remain.

SECTION III.

Method of Enumeration.

Method of enumeration.

8. The method of enumeration hitherto followed has been by tickets of different colours and various shapes, which are attached to the trees after they have been marked with an axe. The shape of the ticket denotes the kind of trees, and its colour denotes the girth or diameter class; so that if a careful account be kept of the number of tickets issued and of the number returned, the balance that has been expended of each kind is known, and these numbers are assumed to represent the number of each kind of tree that has been marked and ticketed. As a check upon the expenditure of tickets, the trees of one class in the Naini Tál Forests were recorded as well as ticketed; but this system was not pursued in the Pátli Dún, where a check was obtained by the resurvey of one compartment after each month's work. The result of the check survey is given in Appendix No. I. After a lengthened trial of the ticket system, Mr. Dansey is now of opinion that it is not suited to present circumstances, as it is "liable to errors of first magnitude," caused by wrong entries in the register; and he proposes to abandon the use of tickets and to revert to the system, on which he originally began to work, of merely recording in a book the number of trees of each species and girth class as they are measured. He thinks that by employing intelligent probationers and apprentices as recorders, he will obtain more reliable results, and the subject will be carefully considered during the coming recess season. The diameter of the trees is measured with a sliding gauge at 4 feet from the ground, and the actual girth of the 1st class trees is measured with a string, and recorded after the trees have been ticketed. In the early stages of the work the height of the workable stem of all 1st class trees was measured and recorded, and the average height of the stems of other classes was determined by the measurement of selected trees of each class; but the information then collected has rendered further height measurements unnecessary.

SECTION IV.

Summary of work done previous to 1879-80.

Work done previous to 1879-80.

9. Previous to the commencement of the year under report, an area of 34 square miles in the Pátli Dún Forests had been surveyed by Mr. Dansey, and the area which, according to his orders, remained on the 1st April, 1879, was—

Pátli Dún	...	...	...	51	square miles.
Naini Tál	...	...	...	28	,,
		Total	...	79	,,

SECTION V.

Work done during 1879-80.

Work done during 1879-80.

10. The year 1879-80 was occupied as follows :—

		Days.
Field work, Pátli Dún Forest	99	
Ditto, Naini Tál Forest	72	
		171
Office work, Pátli Dún and Naini Tál	78	
		78
Training men and visit to Dehra	5	
Sundays	52	
Rainy days during field season	8	
Marches	36	
Leave and holidays	16	
		117
Total ...		366

Number of species separately counted.

11. In the Pátli Dún forest the species of trees separately counted were two, *viz.*, Sál and Sain (*Terminalia tomentosa*). Bákli (*Anogeissus latifolia*) and Sándhau (*Ougeinia dalbergioides*) are said to be the only two other species which occur in considerable numbers in the Pátli Dún forests; the former is limited to certain localities, and the latter rarely attains useful dimensions. In Naini Tál the species of trees separately counted were nine, *viz.*—

i.—Chir	...	*Pinus longifolia.*
ii.—Bánj	...	*Quercus incana.*
iii.—Tillonj	...	„ *dilatata.*
iv.—Karshu	...	„ *semecarpifolia.*
v.—Rianj	...	„ *lanuginosa.*
vi.—Burans	...	*Rhododendron arboreum.*
vii.—Ayár	...	*Andromeda ovalifolia.*
viii.—Utis	...	*Betula acuminata.*
ix.—Other species.		

Of these, Nos. i, ii, vi, and vii, only were counted by means of tickets; the remaining kinds, which are not found generally distributed, were merely recorded. Regarding the separate counting of so many species Mr. Dansey writes :—

"Before resuming the survey of the Naini Tál Forests, it will be necessary to discuss several matters connected with the work, among others this division of the stock. The 'other species' are for the most part peculiar to bottoms and the banks of water-courses, and as such should perhaps not be included in the survey. They comprise a multiplicity of species, some of which yield useful timber, some fuel. Many neither timber nor fuel of value. It would be manifestly impossible to determine their yield, and from their situation they could not be subjected to a regular system of working. Again, Ayár yields a most miserable fuel, and is unfit for anything else. It might also be left out of consideration, although it exists in considerable quantities throughout the Naini Tál Forests. Again, among the Oaks, Bánj only preponderates. The revolution would have to be based entirely on the requirements of Bánj. Utis exists only as an isolated tree along water-courses, and is comparatively rare." He thinks it will be sufficient in future to have three divisions of stock, *viz.*, (i.) Chir, (ii.) the Oaks, and (iii.) Rhododendron, neglecting all other species, of which some of those most frequently met with are *Myrica sapida*, *Cratægus*, *Pyracantha*, wild Pear and Cherry, and several kinds of Willow.

Girth classes.

12. In Naini Tál the classes were five, *viz.*:—

Classes.	Diameter.	Corresponding girth.
I.	2′ 6″ and over	7′ 10″ and over.
II.	2′ 0″ to 2 6″	6 3″ to 7′ 10″.
III.	1′ 6″ to 2′ 0″	4′ 8″ to 6 3″.
IV.	1 0″ to 1′ 6″	3′ 2″ to 4 8″.
V.	0′ 6″ to 1 0″	1′ 7″ to 3 2″.

An additional class was required in Naini Tál on account of the large size to which the Chir trees grow. In some respects diameter classes are better than girth classes; but as the latter are, it is believed, more usually adopted, and the gauges can easily be set to give girth classes in feet and half feet, it will be better to adopt the latter in future work.

In the Government of India Review on the Forest Administration Reports of these Provinces for 1878-79, it is remarked that the classification of girth varies in the Ránikhet, Bhágirathi, and Garhwál Forests, and that this is likely to produce inconvenience. For trees the growth of which is somewhat similar there is no doubt that it would be more convenient to adopt a uniform classification; but it is not clear that this can be advantageously done in the case of trees of such different growth as Sál and the Conifers. And in his memorandum of the 7th May, 1878, Mr. Brandis has suggested that for forests of the latter kind the following girth classes may be adopted:—

I.—12′ and upwards.
II.— 9′ to 12.′
III.— 6′ to 9.′
IV.— 3′ to 6.′

The valuation surveys of the Bhágirathi and Ránikhet Forests are not under the control of the Conservator of the School Circle.

13. The work done during the year in counting trees may be summarized as follows:—

Results of enumeration.

Locality.	Area.				Trees.			
	Number of compartments.	Total area surveyed in 1879-80.	Average areas surveyed on each day actually spent in enumerating.	Average area surveyed per gauge on each such day.	Total number of trees counted.	Average number of trees to the acre.	Average number of trees counted on each day actually spent in enumerating.	Average number of trees counted per gauge on each such day.
		Miles.	Acres.	Acres.				
Pátli Dún ...	69	38	283	8	838,944	34	9,752	271
Naini Tál ...	43	11	125	4	429,923	61	7,667	247
Total ...	112	49	...	...	1,268,867	...	...	...

In the case of the Naini Tal Forests, the area is exclusive of village lands (about 2 square miles) lying within the forest boundaries. Of the 49 square miles shown as surveyed during the year, 4 square miles were resurveyed for check or correction; so that the total area worked over amounts to 53 square miles. The difference in the rate of work in the two localities may be thus explained. In Naini Tál the number of trees to the acre was nearly double of the corresponding number in the Pátli Dún; the number of species to be recorded separately was more than four times as

great, and the slope of the ground is much steeper. While, on the other hand, although in the Pátli Dún the men had not so far to walk between the trees, the ground is stony and broken, the climate is warm at the end of the season, and the men fear the attacks of wild beasts. On the whole the amount of work done must be considered satisfactory.

Unsound trees.

14. Unsound trees of the 1st and 2nd classes were marked and recorded, but not ticketed; unsound trees of other classes were separately recorded. Mr. Dansey remarks on the difficulty of distinguishing between sound and unsound trees, which is no doubt very great in Sál forests which have been regularly burnt. He determined the proportion of unsound to sound 1st class trees in the Pátli Dún Forest by actual enumeration, and found the number of unsound trees to be 37 per cent. of the total number of trees in that class. The proportion of unsound 2nd class trees was ascertained by actual enumeration in the last eighteen square miles only of the work; in the first twenty square miles it was obtained by a "linear survey" through the compartments in which the unsound trees had not been counted. The proportion of unsound 2nd class trees was found to be 19 per cent. of the total number of trees in that class. The difference between the two percentages is not surprising, as the longer each tree stands in the forest, the greater risk it runs of eventual injury by fire.

Rate of growth.

15. In April, 1879, Mr. Dansey intended to fell some selected trees with a view to determining the rate of growth by the counting of annual rings, but the sawyers he had engaged absconded through dread of the cholera which had broken out all over the district (it originated at the time of the Hardwár fair), and he was not able to accomplish anything. On resuming the field work in the autumn, his time was so much occupied in other ways that he could not attempt any further work in this direction until after the close of the financial year.

Reducing factor.

16. Nothing has as yet been done to determine a reducing factor for the trees which have been enumerated.

Description of compartments.

17. The description of the 69 surveyed compartments of the Pátli Dún Forest is roughly written out, and will be completed during the coming recess. The description of 41 out of the 43 surveyed compartments of the Naini Tál Forest is completed.

Establishment.

18. The average strength of the establishment during the year was—

1 Assistant Conservator (Mr. Dansey).
2 Probationers and apprentices from the Forest School.
6 Recorders.
34 Gaugemen.
39 Khalasis.

Mr. Brandis has suggested that a junior Assistant or Sub-Assistant Conservator and a number of foresters or apprentices should be placed under Mr. Dansey's orders, both to accelerate the progress of the work, to guard against its interruption by sickness or accident, and to gain instruction for them in this important branch of their profession. As yet it has not proved possible to provide a junior Assistant or Sub-Assistant Conservator, but one native probationer and two apprentices from the Forest School, (Bábu Karuna Nidhan Mukerji from these Provinces, Fazl-ud-din from the Panjáb, and Jag Mohan from Berar) have been employed in the Working Plan Division during a portion of the past season. Mr. Dansey speaks very highly of them, and says that the good quality of the work and

the large area surveyed are in a great measure due to their energetic supervision. Owing to the assistance rendered by them the cost of the work was much lessened. A European Ranger was attached to the division until 1st March, 1880, when it was determined to dispense with the services of a man of his class. Mr. Dansey speaks of the difficulties which he has experienced in raising an establishment and inducing his men to continue working after the weather becomes hot. This difficulty will be lessened by the employment of apprentices from the Forest School for the higher class of work, and Mr. Dansey hopes to be able to raise a permanent staff of khalasis at Dehra, and to retain their services throughout the year by the grant of leave pay during the recess months. This will probably be found a good arrangement. Regarding the strength of a party which one officer can supervise, he remarks that this must be determined by the area which he can examine satisfactorily; and that this area will be less or greater according to the number of species to be counted, the density of the crop, and the configuration of the ground. The number of sub-parties must be fixed with reference to this area, it being remembered that where the crop is dense, the number of species to be counted many, and the ground difficult, they can be employed nearer together than where the reverse is the case.

Financial results.

19. As previously stated, the area surveyed during the year amounted to 49 square miles. The expenditure was as follows:—

Head of expenditure.	Pátli Dún.	Naini Tál.	Total.
A VI.*b*. ...	711	...	711
A VI.*c*. ...	733	...	733
A VIII.*c*. ...	3,542	1,276	4,818
B.I.*b*. ...	5,400	...	5,400
B.II.*b*. ...	1,182	...	1,182
Total ...	11,568	1,276	12,844

It would be difficult to apportion the charges accurately between the Pátli Dún and Naini Tál.

Work remaining in the Pátli Dún and Naini Tál.

20. The area which remains unsurveyed in Naini Tál is about 17 square miles; from which may be deducted 5 square miles of village lands, and ground of which a survey is not required, leaving a balance of 12 square miles to be surveyed. About 13 square miles of the Pátli Dún Forests remained unsurveyed at the close of the year. Of this area about 10 square miles, over which the trees have been felled to excess, and which is now sparsely covered with isolated hollow Sál trees standing among very young growth, need not be surveyed, and the balance of 3 square miles will, it is hoped, be completed before the party comes in from the field.

Future arrangement.

21. It has been proposed that the next work to be undertaken shall be the survey of the Nindhaur Forests in Kumaun. Mr. Brandis says that this should be delayed until the topographical survey is completed. The survey of the valley is completed (with the exception of a small portion near Durga Pipal), and two of the sheets will probably be in print before the commencement of next working season; so that if it be decided to undertake this work, it can probably be managed by the aid of tracings from those sheets, which will not be printed in time. The tracings should be applied for as soon as possible, as they take a long time to prepare. Mr. Dansey proposes to apply for furlough during 1881, and he suggests that it will be better for him, instead of taking up new work after the completion of the Naini Tál survey (which will be finished some time during the coming autumn), to return to headquarters for the purpose of completing the working plans of the area he has surveyed, and to allow the new work to be taken up by his

successor. This is doubtless a very desirable arrangement, for Mr. Dansey could hardly be granted furlough until he has cleared up all his work. The Secretary to Government was addressed in March last on the subject of strengthening the working plan staff by the addition of a junior trained officer who could take Mr. Dansey's place should his services cease to be available; and it is hoped that this can be arranged before the next working season, as should he leave, the work would come to a standstill.

Appendices.

22. The following appendices accompany this report:—

No. 1.—Result of resurvey of four compartments in the Pátli Dún Forest.

No. 2.—Result of valuation surveys in a portion of the Pátli Dún Forest.

No. 3.—Result of valuation surveys in a portion of the Naini Tál Forests.

F. BAILEY, CAPTAIN, R.E.,

Conservator of Forests, School Circle.

APPENDIX No. I.

Shewing the results of the resurvey of four compartments in the Patli Dún Forests, 1879-80.

Compartment.		Sound.								Unsound.				Total difference.	Percentage of error.
		1st class.		2nd class.		3rd class.		4th class.		1st class.		2nd class.			
		Sál.	Sain.	Sál.	Sain.	Sál.	Sain.	Sál.	Sain.	Sál.	Sain.	Sál.	Sain.		
10	Original	185	115	253	133	752	81	2,118	251	106	26	87	22		
	Re-survey	185	110	252	133	752	80	2,098	251	109	26	85	23		
	Differences ...	...	5	1	...	...	1	20	...	3	...	2	1	33	0·8
*42	Original	332	446	771	403	2,150	417	3,418	403	300	46	273	33		
	Re-survey	322	402	755	383	2,116	414	3,130	364	245	50	279	36		
	Differences ...	10	44	16	20	34	3	288	39	55	4	6	3	522	6·1
43	Original	959	803	1,438	404	2,904	229	3,773	163	675	121	359	36		
	Re-survey	959	803	1,438	402	2,904	228	3,767	164	674	121	356	37		
	Differences ...	...	...	...	2	...	1	6	1	1	...	3	1	15	0·12
71	Original	474	64	1,347	191	4,1[illegible]	395	4,486	446	236	15	209	21		
	Re-survey	476	70	1,347	193	4,195	395	4,480	444	236	16	210	22		
	Differences ...	2	6	...	2	4	...	6	2	...	1	1	1	25	0·2

* A serious error being discovered in Compartment 42, it was again surveyed and the error corrected.

APPENDIX No. II.

Abstract showing the result of the valuation survey of a portion of the Pátli Dún Forest, surveyed during the year 1879-80.

Number of compartments.	Area in acres.	Number of trees counted.												Total.	Description of compartments.	Remarks.
		Sál (Diameter classes).						*Sain (Diameter classes).*								
		I. 2′ and over.		II. 1′ 6″ to 2′.		III. 1′ to 1′ 6″	IV. 6″ to 1′	I. 2′ and over.		II. 1′ 6″ to 2′.		III. 1′ to 1′ 6″	IV. 6″ to 1′			
		Sound.	Unsound.	Sound.	Unsound.			Sound.	Unsound.	Sound.	Unsound.					
1	238·2	171	255	439	231	1,167	2,634	141	55	187	52	116	181	5,629	written out roughly.	During the survey of 34 square miles of this block completed during the years 1877-78; 1878-79, data were obtained which give all the required information concerning the average dimensions both in girth and in length of the stems for the 1st and 2nd classes. The information then obtained has been deemed applicable to the whole of the block.
2	244·6	142	81	371	144	1,067	2,283	102	28	225	16	249	219	4,927		
3	306·4	415	247	1,059	412	2,963	6,133	272	70	367	81	428	592	13,039		
4	247·8	376	183	908	208	2,246	3,453	235	28	319	52	494	293	8,794		
5	217·0	303	190	604	189	1,532	2,550	281	40	295	8	311	248	6,551		
6	229·4	355	150	767	170	1,412	2,272	276	33	239	24	276	122	6,096		
7	480·0	710	142	1,530	164	3,326	3,626	481	36	515	38	648	455	11,671		
8	238·2	294	53	693	62	1,275	915	174	4	183	5	186	123	3,967		
9	475·8	567	81	1,701	156	4,954	8,364	308	52	388	42	553	376	17,542		
10	372·8	185	106	253	87	752	2,118	115	26	133	22	81	251	4,129		
11	471·8	406	355	753	395	2,166	5,025	437	84	505	77	536	257	10,996		
12	240·6	261	203	671	247	1,794	2,963	359	41	325	47	387	124	7,422		
13	317·8	405	623	600	331	1,567	3,426	212	49	201	31	177	147	7,769		
14	207·6	230	186	433	131	996	2,331	168	25	145	7	125	147	4,924		
15	117·4	29	44	100	44	256	597	20	2	45	3	62	25	1,227		
16	195·2	468	327	523	144	1,410	2,396	249	55	234	30	157	53	6,046		
17	175·2	255	77	534	85	1,410	2,023	269	28	256	14	217	93	5,269		
18	195·6	221	80	529	140	1,299	1,505	259	5	269	29	259	167	4,792		
19	348·8	493	119	1,028	219	2,117	2,884	271	37	260	28	213	121	7,790		
20	218·8	107	71	332	105	1,062	2,312	128	18	138	20	248	196	4,737		
21	537·4	558	402	1,070	436	3,030	6,363	5[illegible]2	107	425	72	451	445	13,871		
22	407·6	391	593	524	136	468	1,606	103	21	41	6	42	170	4,101		
23	452·0	431	493	709	267	1,835	5,269	274	93	184	37	158	258	10,008		
24	325·2	116	240	290	212	1,297	2,833	202	80	124	37	107	298	5,836		
25	216·0	142	160	287	98	768	1,482	22	13	12	6	22	133	3,145		
26	217·4	258	209	493	230	1,125	3,350	128	26	146	13	107	183	6,268		
27	278·2	457	585	862	484	2,066	6,862	200	54	274	35	311	210	12,400		
28	400·0	306	373	722	337	1,988	5,367	293	59	442	47	604	670	11,128		

29	280·6	246	103	476	106	892	1,947	186	56	177	16	173	131	4,469	
30	475·2	560	336	1,610	444	4,007	6,217	311	34	385	51	777	730	15,462	
31	381·2	244	212	584	235	1,598	4,435	230	47	218	46	309	342	8,500	
32	488·4	524	512	1,431	568	4,216	9,840	215	61	346	77	515	371	18,676	
33	448·4	170	155	591	282	1,964	3,902	165	72	144	45	164	435	8,089	
34	630·0	687	914	1,487	758	4,852	9,830	539	222	615	86	449	416	20,855	
35	237·4	140	276	581	332	1,240	2,345	153	38	288	34	248	254	5,929	
36	424·0	533	253	1,251	335	3,359	5,084	349	613	477	52	635	485	12,876	
37	427·6	1,117	431	2,302	480	5,728	6,387	236	45	413	80	790	676	18,685	
38	486·8	721	518	1,858	615	4,990	7,811	458	60	645	67	964	868	19,575	
39	345·6	517	137	1,598	175	5,641	8,404	838	26	495	20	725	818	18,894	
40	441·6	352	182	1,541	273	5,934	9,370	375	45	605	51	1,266	1,414	21,408	
41	268·4	295	46	1,212	108	4,264	6,506	269	10	450	51	880	870	14,931	
42	345·6	322	245	755	279	2,116	3,130	402	50	383	36	414	364	8,496	
43	456·8	959	675	1,438	359	2,904	3,773	808	121	404	36	229	163	11,864	
44	322·0	418	246	1,283	276	3,941	5,600	334	147	444	47	593	492	13,821	
45	382·0	656	173	1,396	275	3,622	4,336	477	40	618	43	711	600	12,947	
46	376·0	763	145	1,300	181	2,472	3,400	388	30	381	34	343	305	9,692	
47	280·8	352	216	832	205	2,087	2,808	268	42	293	42	414	239	7,798	
48	347·6	375	157	1,123	188	3,368	5,096	255	19	258	34	447	281	11,601	
49	476·0	205	304	868	454	2,338	4,270	171	87	107	56	49	174	9,103	
50	288·0	192	184	559	210	1,241	2,598	116	65	75	33	44	79	5,403	
51	258·4	473	347	1,080	242	2,084	2,363	157	75	158	31	102	56	7,168	
52	514·8	851	636	1,942	373	5,194	9,890	268	97	189	52	143	279	19,894	
53	360·4	265	502	1,172	390	3,512	7,469	251	160	348	88	474	296	14,927	
54	256·0	377	193	759	124	1,384	2,245	60	14	53	9	47	75	5,340	
55	300·0	420	286	916	185	2,539	3,386	159	29	205	15	292	290	8,722	
56	222·0	225	100	1,124	137	3,375	3,562	140	53	222	12	384	369	9,703	
57	169·6	186	63	712	108	2,469	3,346	68	5	158	4	436	744	8,299	
58	120·4	216	98	742	142	1,914	2,356	62	24	144	9	365	560	6,622	
59	518·8	1,053	477	3,004	561	8,911	6,575	242	53	570	61	1,512	1,778	24,197	
60	309·2	797	61	2,571	59	5,877	4,314	232	7	461	7	1,046	1,123	16,556	
61	302·4	714	54	2,437	79	6,539	7,212	270	10	512	17	1,237	1,850	20,931	
62	274·0	520	55	1,736	80	4,862	6,334	224	12	409	8	983	1,489	16,712	
63	236·8	769	368	1,740	159	3,697	2,547	63	25	177	33	534	769	10,881	
64	756·4	859	464	3,140	837	11,877	12,834	281	41	700	67	2,343	4,715	38,158	
65	420·4	1,324	564	2,670	421	7,271	7,708	188	65	473	109	1,124	1,815	23,732	
66	996·8	1,285	763	4,104	1,037	14,626	19,026	693	69	1,168	69	2,834	4,829	50,503	
67	409·6	993	657	2,335	502	5,970	7,357	167	58	368	46	686	628	19,767	
68	626·4	624	439	2,137	602	8,928	12,162	353	38	852	83	2,134	2,634	30,986	
69	319·2	935	358	1,794	249	4,618	6,541	113	19	322	33	606	775	16,368	
	24,267·4	32,592	19,534	80,986	19,239	225,177	337,278	17,550	3,353	22,587	2,674	35,956	42,038	838,944	

Description of compartments

APPENDIX No. III.

Abstract showing the result of the valuation survey of a portion of the Naini Tál Forests, surveyed during the year 1879-80.

Compartment.	Area.	Chir (Diameter classes)					Banj—(Diameter classes.)					Burans (Diameter classes.)					Ayár (Diameter classes)					Utis (Diameter classes.)				
		I. 2′ 6″ and over.	II. 2′ to 2′ 6″	III. 1′ 6″ to 2′	IV 1′ to 1′ 6″	V. 6′ to 1′	I. 2′ 6″ and over.	II. 2′ to 2′ 6″	III. 1′ 6″ to 2′	IV. 1′ to 1′ 6″	V. 6″ to 1′	I. 2′ 6″ and over	II. 2′ to 2′ 6″	III. 1′ 6″ to 2′	IV. 1′ to 1′ 6″	V. 6″ to 1′	I. 2′ 6″ and over.	II. 2′ to 2′ 6″	III. 1′ 6″ to 2′	IV. 1′ to 1′ 6″	V. 6″ to 1′	I. 2′ 6″ and over	II. 2′ to 2′ 6″	III. 1′ 6″ to 2′	IV. 1′ to 1′ 6″	V. 6″ to 1′
1	132·8	14	143	995	1,887	3,418	11	13	67	227	875	...	1	2	20	67	...	...	1	21	48	...	...	...	3	...
2	104·0	9	82	505	1,034	2,382	...	36	139	515	1,386	3	...	19	149	620	...	...	3	27	139	...	...	...	...	...
3	300·4	96	426	1,932	3,564	6,346	77	71	337	1,383	4,370	6	25	103	604	1,665	1	5	20	145	625	1	1	...	8	15
4	80·0	11	116	776	990	1,277	3	109	57	177	318	3	1	2	17	29	2	3	2	20	42	...	1	...	2	2
5	124·4	27	136	863	1,774	2,558	62	55	238	947	2,556	...	5	31	239	559	1	...	4	58	353	7	6	12	13	4
6	233·2	22	111	638	1,728	2,830	59	124	550	1,456	4,208	6	11	50	208	952	2	1	6	81	345	2	2	12	19	48
7	354·0	24	101	654	1,455	3,976	72	174	735	2,100	7,685	5	21	115	374	1,257	1	3	35	104	437	8	13	44	123	179
8	292·0	44	111	763	1,620	2,838	14	65	457	1,008	2,290	...	3	8	50	105	1	5	5	27	188	1	4	39	39	41
9	248·4	23	81	304	461	3,008	26	47	191	276	1,289	11	6	51	90	243	1	3	22	35	119	2	9	19	34	62
10	321·6	31	154	736	1,064	6,770	36	93	274	513	1,694	3	4	23	44	118	...	1	5	18	47	...	...	9	18	25
11	107·6	11	74	234	233	275	53	81	441	479	512	7	20	128	365	640	1	4	27	79	205	2	1	7	1	9
12	199·2	11	53	135	150	404	261	258	539	472	651	58	112	494	781	1,192	14	17	96	145	425	11	23	63	56	217
13	237·6	1	8	47	82	676	155	295	900	777	1,596	112	267	1,336	2,110	4,152	71	46	216	685	1,638	...	...	...	1	2
14	75·2	2	34	234	331	1,525	17	22	90	263	542	...	...	...	1	1	...	...	1	1	2	...	...	...	...	...
15	65·2	50	20	170	419	797	50	17	77	294	1,836	...	...	4	7	29	...	...	...	2	12	...	...	...	...	...
16	84·0	...	1	34	160	736	121	178	361	731	1,298	92	120	537	1,411	3,198	6	23	110	235	782	4	2	9	9	11
17	72·4	2	6	53	179	804	16	46	223	581	1,300	3	18	165	461	832	...	5	24	105	220	...	...	...	2	2
18	99·6	3	20	217	435	1,097	45	122	279	473	456	8	33	250	781	1,388	4	14	36	222	467	1	5	13	18	16
19	124·4	9	58	32	87	210	79	76	352	398	459	36	105	486	883	1,753	11	15	99	339	1,546	2	4	10	17	15
20	139·6	10	58	530	1,202	1,337	29	58	168	291	254	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	136·4	5	40	395	1,435	3,082	28	95	301	949	2,747	6	9	54	199	659	2	2	13	138	279	1	2	7	14	16
22	71·6	6	64	480	988	1,960	6	22	56	271	319	3	...	1	7	16	...	1	...	5	11	...	...	1	4	2
23	89·6	2	7	119	411	776	39	143	350	461	1,210	8	36	236	585	1,989	27	7	60	403	1,071	2	18	28	52	112
24	116·4	3	12	161	702	1,595	40	67	224	362	778	3	26	187	304	950	1	8	53	184	603	8	12	25	25	45
25	171·6	1	...	39	188	284	33	89	230	496	748	7	33	151	196	612	1	3	23	111	424	...	3	4	6	14
26	62·4	17	37	86	74	536	76	113	207	293	309	42	44	27	107	122	31	36	9	64	58	...	4	5	2	7
27	103·6	6	...	5	3	16	23	34	147	283	561	1	1	16	70	58	2	...	1	64	13	2	13	35	46	150
28	156·4	52	93	95	194	481	182	103	229	337	685	25	80	113	450	618	4	6	43	61	257	4	5	18	36	88
29	86·8	22	86	229	462	2,566	71	79	229	585	1,506	21	28	77	174	391	2	7	24	63	131	4	12	25	43	140
30	144·4	3	5	15	13	103	270	182	444	466	1,013	247	346	802	1,297	1,981	37	136	289	576	995	7	13	39	48	53
31	74·0	2	6	10	15	35	115	93	74	54	236	163	206	467	609	780	22	29	120	269	636	1	...	2	3	2
32	203·6	...	...	...	...	...	94	115	147	126	258	287	389	967	1,455	968	36	45	175	343	763	...	...	...	...	...
33	150·4	...	19	24	...	...	144	124	350	501	717	121	269	1,074	2,208	2,928	155	142	207	604	1,143	6	7	28	8	26
34	222·0	...	...	...	...	...	134	132	209	155	928	248	342	1,045	1,245	2,093	34	53	274	761	1,577	7	...	10	7	16
35	310·0	19	92	161	117	176	294	513	1,336	2,267	6,310	53	82	391	231	895	30	46	55	91	334	60	97	164	224	405
36	129·2	5	36	133	53	57	135	293	778	993	1,143	46	99	319	363	484	5	11	29	79	196	3	2	9	14	21
37	226·8	6	33	105	71	35	313	314	654	728	1,560	242	349	783	1,003	1,482	15	25	146	418	894	10	2	8	6	7
38	215·6	...	4	4	5	6	243	442	1,265	1,400	3,221	246	294	947	1,55	2,748	2	14	109	490	1,610	1	5	9	19	29
39	152·0	25	77	184	193	196	344	382	837	966	1,869	82	185	631	1,184	1,401	3	11	66	224	653	3	6	4	7	9
40	75·6	30	25	55	46	95	134	152	232	155	154	78	167	508	718	893	19	23	121	322	399	4	8	19	15	21
41	3[illegible]·2	124	581	2,055	2,648	2,396	462	503	951	1,112	1,129	58	104	275	457	735	39	11	53	200	421	19	22	50	54	47
42	161·6	43	155	312	273	226	124	121	212	221	191	79	128	727	1,195	1,602	22	21	109	282	636	1	3	3	7	4
43	154·4	121	197	419	408	722	67	212	51	481	565	97	115	356	681	1,232	31	36	63	144	220	2	5	23	37	47
	7,005·2	903	3,362	14,930	27,453	58,607	4,555	6,273	16,289	26,923	63,658	2,546	4,082	13,825	24,831	44,442	636	815	2,754	8,009	20,964	186	310	753	1,048	1,910

APPENDIX No. III.—(concluded).

Abstract showing the result of the valuation survey of a portion of the Naini Tál Forests surveyed during the year 1879-80.

Compartment	Area.	Tillonj (Diameter classes.)					Rianj (Diameter classes.)					Karshu (Diameter classes.)					Other species (Diameter classes.)					Total.	Description of compartment.	Remarks.
		I. 2′-6″ and over.	II. 2′ to 2′-6″	III. 1′-6″ to 2′	IV. 1′ to 1′-6″	V. 6″ to 1′	I. 2′-6″ and over.	II. 2′ to 2′-6″	III. 1′-6″ to 2′	IV. 1′ to 1′-6″	V. 6″ to 1′	I. 2′-6″ and over.	II. 2′ to 2′-6″	III. 1′-6″ to 2′	IV. 1′ to 1′-6″	V. 6″ to 1′	I. 2′ 6″ and over.	II. 2′ to 2′-6″	III. 1′-6″ to 2′	IV. 1′ to 1′-6″	V. 6″ to 1′			
1	132·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	7	21	143	7,988	Completed ...	No data have as yet been obtained with which to determine the annual yield of fuel and timber.
2	102·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	5	16	146	7,217	...	
3	300·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	9	127	1,178	23,201	...	
4	80·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	18	2	13	492	4,486	...	
5	122.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	25	115	1,258	11,915	...	
6	233·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	39	314	2,277	16,106	...	
7	354·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	19	118	573	3,793	24,108	...	
8	292·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	12	214	825	3,619	14,399	...	
9	248·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8	31	291	1,527	8,272	...	
10	321·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	6	59	312	1,996	14,050	...	
11	107·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	13	61	124	260	4,356	...	
12	199·2	214	173	376	379	543	...	...	...	...	...	...	...	...	...	...	29	28	87	272	858	9,599	...	
13	237·6	242	242	609	538	840	...	...	...	...	...	...	...	...	...	...	3	16	50	240	785	18,735	...	
14	75·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	14	3,073	...	
15	65·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	6	26	3,818	...	
16	84·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	28	57	239	10,498	...	
17	72·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	13	81	350	5,445	...	
18	99·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	12	41	158	541	7,160	...	
19	124·4	66	93	234	314	304	...	...	...	...	...	...	...	...	...	...	2	5	25	78	391	8,594	...	
20	139·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	7	3,946	...	
21	136·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	8	23	66	576	11,149	...	
22	71·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	24	4,248	...	
23	89·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	14	68	209	914	9,357	...	
24	116·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	4	28	94	353	677	...	
25	171·6	...	...	...	...	...	2	2	17	51	126	...	...	...	...	...	2	5	52	79	243	4,273	...	
26	62·4	5	4	4	...	21	...	...	...	...	...	...	...	...	...	...	5	16	50	74	302	2,787	...	
27	103·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	11	129	302	980	2,987	...	
28	156·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	14	76	134	746	5,241	...	
29	86·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	31	122	372	1,425	8,941	...	
30	144·4	60	78	122	149	262	...	...	...	...	...	60	76	100	114	106	28	24	97	153	465	11,074	...	
31	74·0	52	56	111	110	188	...	...	...	...	...	23	32	91	148	137	1	...	4	11	85	4,998	...	
32	203·6	236	323	642	897	1,410	49	65	83	112	345	180	305	632	1,013	2,109	34	51	85	270	1,167	16,176	...	
33	150·4	38	48	123	276	311	40	39	67	74	121	18	81	110	236	329	10	23	88	251	668	13,796	...	
34	222·0	102	116	299	428	820	29	65	87	140	505	33	72	179	344	524	36	53	283	706	1,829	15,920	...	
35	310·0	3	4	8	45	77	...	...	...	...	...	1	...	13	24	89	76	132	374	995	2,570	18,764	...	
36	129·2	16	22	72	161	184	...	...	...	...	...	...	...	...	2	1	10	14	79	170	496	6,575	...	
37	226·8	61	101	204	212	468	...	...	...	...	...	...	...	...	...	...	33	40	86	220	517	11,161	...	
38	219·6	94	184	491	785	2,080	...	...	...	8	...	...	...	...	...	1	2	5	35	191	856	19,395	...	
39	152·0	53	63	119	244	709	...	...	...	...	...	1	1	...	2	14	7	10	21	119	743	11,599	...	
40	75·6	5	14	22	6	9	...	...	...	...	...	...	...	1	1	...	13	24	90	219	604	5,401	...	
41	393·2	9	5	28	35	73	...	...	...	...	...	...	...	...	...	...	25	38	98	239	840	15,907	...	
42	161·6	9	14	19	25	35	70	104	265	228	234	...	3	4	7	5	28	49	90	241	367	8,512	Undescribed.	
43	154·4	...	5	7	17	16	28	30	51	62	89	...	...	...	...	...	16	23	85	164	494	7,919		
	7,005·2	1,265	1,546	3,490	4,621	8,350	218	305	570	675	1,420	316	570	1,130	1,891	3,315	456	746	2,882	8,909	37,184	429,923		

ORDERS OF GOVERNMENT.

No. 978A. OF 1880.

RESOLUTION.

REVENUE (FORESTS) DEPARTMENT.

Dated Naini Tal, the 19th October, 1880.

Annual Forest Administration Report for the year ending 31st March, 1880.

1. *Summary of administration.*—The Divisions and Sub-divisions into which the forests are divided are shown below, together with the officers who held charge during the year.

Division.	Area in square miles.	Officer in charge.
Central circle.	1,468	
Conservator	...	Mr. Greig.
Naini Tal	Protected	„ Braidwood.
Ránikhet	7	„ Brereton.
Kumaun	635	Major Campbell.
Garhwál	505	Mr. O. Greig.
Jhánsi	37	
Lalitpur	143	
Bijnor	These forests now form portion of Garhwál Division.	Mr. Grant.
Ganges	141	„ O. Greig.
Oudh circle.	1,079	
Conservator	...	Capt. Wood.
Bareilly	137	Mr. Ponsonby.
Bhira, Kheri (Sub-division) ...	427	Ditto.
Trans-Sarda, Kheri ...	...	„ Wilmot, assisted by Mr. Battie.
Bahramghat	...	Babu Kanhaya Lal.
Bahraich	257	Mr. Allan, assisted by Mr. Pinder.
Gonda	143	„ Rebsch.
Gorakhpur	115	„ Campbell.
School circle.	732	
Conservator	...	Capt. Bailey.
Jaunsár	114	Mr. Smythies.
Dehra Dún	278	„ O'Callaghan.
Saháranpur	276	Dr. Warth.
Tons	64	Mr. Murray.

Mr. G. Greig held charge of the Oudh Circle in addition to his own, for three months from 27th August, 1879, while Captain Wood was on privilege leave, and Captain Wood similarly held charge of the Central Circle for three months from 1st January, 1880, during Mr. Greig's absence. Capt Bailey held charge of the School Circle throughout the year. Major Jarrett V. C., was transferred to the Central Provinces, Mr. Bagshawe to Berar, and Mr. Rind sent on special duty to Biluchistan. Dr. Warth, late of the Customs Department, joined the School Circle in December.

2. In the Central Circle the Garhwál and Bhagirathi Divisions were reconstituted and a new Division, the Ganges, formed. The Bijnor forests were taken over by the Forest Department from the Collector, with the exception of the Chandi Forest. In the Oudh Circle, owing to the formation of the new district of Pilibhít, comprising the parganas in which the forests of the Bareilly Division are situate, the name of the Division has been changed to the Pilibhít Division, by which it will be known in future.

Orders were passed during the year on the reports of the Special Commission, of which Captains Pitcher and Wood were members, *viz.*, (1) General Orders connected with the privileges of villages adjoining the Oudh Forests generally; (2) overruling the claims of the Raja of Khairágarh; (3) compounding with the Maharaja of Balrampur for arrears of grazing dues, and giving him a contract for them for a fixed period; (4) bringing the forests that were formerly grants in Oudh under the same rule as to privileges as other forests in Oudh, the Department not being liable to pay cesses, but liable to grant the three-mile privileges.

In the School Circle the Jaunsár Division was found too large to be properly managed by one officer in addition to the instruction of probationers and apprentices, and a new Division, consisting of the leased forests of Teri, Garhwál, and of Bushahir, in the valleys of the Tons, Rupin, and Pabar, together with the Kunigadh and Deogarh Forests of Jaunsár Báwar, was formed out of it, called the Tons Division. The control of the valuation surveys has been placed under Mr. Dansey, who was transferred from the Central Circle. Captain Bailey brings to notice the insufficiency of the staff under him to carry on the work of the Circle and of the Forest School. The latter has hitherto labored under great disadvantages. The new buildings with accessories are being got ready, but the teaching staff is far short of what it should be, and the probationers have been hurried off to fill vacancies in the Department long before their period of instruction has elapsed. The following probationers and apprentices entered the Forest School during the year :—

			Probationers.	*Apprentices.*	
From North-Western Provinces and Oudh,			5	0	Ranger
Ditto	ditto	Punjáb ...	0	1	Apprentices.
Ditto	ditto	Berar ...	0	1	
		Total ...	5	2	

They are all "Natives of India," have been fully employed in the forests, and are reported to have done good work. Applications for the admission of apprentices have been received from Assam, Sind, and the Foreign Minister to the State of Patiala, but under present circumstances they cannot be complied with. If the School is to continue at all, His Honor thinks it should be efficiently organized and made a reality. The question of its future has however already been referred to the Government of India for orders, and it is unnecessary to allude further to the subject here.

*Under sections 45, 75, 67, 25, (i), 71 (b) (c) (d) 25, and 31.

3. Rules under the Forest Act were issued during the year as noted in the margin.*

4. *Area and boundaries.*—The total area of reserved forests at the beginning and end of the year may be shown thus :—

	Area on 1st April, 1879.	Area on 31st March, 1880.	Increase or Decrease.
	Square miles.	*Square miles.*	*Square miles.*
Central Circle	1,468	1,468	—
Oudh ,,	1,072	1,079	+ 7
School ,,	720	732	+ 12

The nominal area of the Central Circle remains unaltered, but the correct areas for all the Division have not yet been furnished by the Survey Department, nor the maps published. Fair progress has been made in the demarcation of boundaries. The outer boundaries are nearly all complete, and the village lands and the areas open for the exercise of recorded rights are being marked off.

The increase of seven square miles in the reserved forests of the Oudh Circle is due—excepting 225 acres, which were purchased—to the resumption and transfer to the Department of certain waste-land grants. The demarcation of the Bahraich Forest made good progress under Mr. Nicholson, the officer specially appointed for the purpose, and will, it is hoped, be completed during the coming field season. The increase of area in the School Circle is due to the correct area of the Dehra Dún and Sahárunpur Forests having been found to be 2,560 acres more than previously shown; to the Jaunpur Forests with an area of about 1,280 acres having been taken over from the Central Circle; and to the forests of the Thakurs of Raiengarh and Dadi, with areas of about 2,560 and 960 acres, having been leased. The boundary lines and marks of the forests in British territory are said to be in good order, and the demarcation of the leased forests is in progress, but has not yet been commenced in Bushahir or Dadi. Valuation survey work was continued in the Central and School Circles, and data are being collected for the preparation of working plans, the importance of which has been impressed on Conservators.

5. *Protection and improvement.*—The area covered by plantations was—

	On 1st April, 1879. Acres.	On 31st March, 1880. Acres.	+ or—
Central Circle	585	695	+ 110
Oudh "	309	445	+ 136
School "	1,058	1,122	+ 64

And the amount expended was—

			1878-79.	1879-80.
Central Circle	...	Rs.	13,948	16,217
Oudh "	...	"	4,894	6,085
School "	...	"	15,950	17,369
Total	...		34,792	39,671

The question of the adoption of the Bushahir rules for the leased forests in native Garhwál has been decided since the close of the year.

The increased area in the Central Circle is due to 110 acres having been added to the Jabar Deodar plantation in the Naini Tal Division, at a cost of only Rs. 6, as shown in Form 46. This and the Ayarpatta oak plantation are the only two in the Division, the Conservator reports complete and a decided success, though here and in Kumaun, Ránikhet and Jhánsi Divisions there are various other plantations imperfectly stocked, incomplete, or the success of which is uncertain, and on which money was expended, but for which no area is shown.

6. The Ránikhet plantations are, of course, by far the most important, and comprise 367 acres out of the total area, and Rs. 11,538 were spent on them out of Rs. 16,217. They continued to do good work as usual. The seeds sown as a rule vegetated freely, but it is said the climate

is too severe for the gum tree. 25,825 Deodars, 3,158 Alder, 2,854 Ash, 769 sweet chestnut, 44 Acacias; in all 32,650 trees, were planted in the forests. The following forest and fruit trees were distributed during the year :—

Forest Trees.

Gums.	Ash.	Deodar.	Walnut.	Horse chestnut.	Willows.	Miscellaneous.
185	...	2,139	5,647	1,890	185	772

Fruit Trees.

Apple.	Pear.	Apricot.	Plum.	Cherry.	Peach.	Miscellaneous.
634	117	376	294	318	25	217

The revenue derived by sale of fruit amounted to Rs. 533-7-3. A representation has lately been made to Government by Messrs. Wheeler, Brothers, against the sale by Government of fruit in the Naini Tal station, and it has been decided that it shall in future be disposed of wholesale to a contractor, except such portion as may be reserved for sale in Ránikhet itself.

The stock in the nursery consists of—

	(1) *Forest Trees.*	
Deodar	130,130	
Walnut	78,000	
Horse chestnut	29,626	
Oak	9,416	
Willow	5,642	
Picea Smithiana	1,419	
Pinas	223	
A. Pinsapo	286	
Cypress	2,209	
Eucalyptus	3,746	
Miscellaneous	2,411	—263,108
	(2) *Fruit Trees.*	
Apple grafts	788	
„ stock	3,867	
Pear grafts	5,756	
„ stock	4,255	
Apricot, budded	750	
„ stock	5,140	
Peach, budded	563	
„ stock	17,100	
Loquat	263	
Quince	247	
Fig	200	
Currant	578	
Chestnut	150	
Plum, budded	1,785	
„ stock	2,745	
Cherry, budded	595	
„ stock	7,693	—52,475
Total		315,583

7. The plantations in Oudh are experimental only, except at Gorakhpur, where 137 acres were added. A forest garden with an area of nearly five acres was formed near Dehra in the School Circle, but the success gained is said to have been small. A site has also been selected at Chakrata; sal and deodar seeds were largely sown with varying success and a large number of young trees planted out.

8. The area in which protection was attempted; that in which it failed; that successfully protected from fire; and the total cost of protection up to 30th June, 1880, was as follows:—

	Area attempted to be protected in acres.	Failure in acres.	Actually protected in acres.	Cost.
				Rs.
Central Circle	1,87,002	483	1,87,119	48,474
Oudh "	1,45,389	4,297	1,41,092	22,369
School "	96,422	1,464	94,958	19,171
Total, 1879-80 ...	4,29,413	6,244	4,23,169	90,014
" 1878-79 ...	3,92,012	90,721	3,01,291	67,564

Great stress was laid on the importance of this branch of Forest Administration in the orders on the last report, and His Honor is glad to observe that though the area attempted to be protected was greater, the area in which failure occurred was considerably less than last year. The statistics quoted by Mr. Greig in his paras. 46 to 48, and Captain Wood in his para. 24, show that fire conservancy in the North-Western Provinces and Oudh, which has been the subject of unfavourable comment by the Inspector-General of Forests and the Government of India can, in fact will, bear comparison with that of other provinces, including that of the Central Provinces, specially mentioned by the Government of India, in which about 5½ per cent. of the reserved forests were protected from fire, whilst in the North-Western Provinces and Oudh the protected area was 14 per cent. of the total area, and in the forests of the North-Western Provinces only more than 18 per cent. of the total area was protected. His Honor is satisfied that as much is done as is possible under the difficulties to be contended against, and with the limited means at the disposal of the department; still forest officers of all grades cannot be too careful to exercise the utmost vigilance in this respect, and to secure that whatever work is undertaken is done thoroughly and well.

9. *Construction of communications and buildings.*—Progress has been made in all three circles in the construction of roads, bridges,

and buildings. The amount expended was as follows compared with 1878-79 :—

	Roads and bridges.	Buildings.	Other works.
Central Circle	20,496	3,848	1,040
1878-79	19,987	5,450	87
Oudh Circle	13,854	16,583	2,171
1878-79	8,754	12,856	3,933
School Circle	7,081	27,672	16
1878-79	11,587	884	100
Total ...	41,431	47,503	3,227
1878-79 ...	40,328	19,190	4,120

In the Central Circle the roads were much damaged by excessive rain, and required extensive repairs which were carried out. In the Oudh Circle the house and machine shed of the late North-Western Contract Company with land adjoining were purchased for Rs. 5,000 for the Bahramghat depôt, and in the School Circle Rs. 26,060 were spent on the purchase and repair of the new buildings for the Forest School.

10. The results of prosecutions for breaches of forest rules are shown in the following table for this and the preceding year :—

	Prosecutions.		*Convictions.*	
	Number of cases.	Number of persons.	Number of cases.	Number of persons.
Central Circle	278	580	232	465
1878-79	321	611	292	540
Oudh Circle	92	184	70	137
1878-79	71	136	66	120
School Circle	55	129	50	102
1878-79	67	143	57	117

By far the greater number were for unauthorised felling or appropriation of wood and minor forest produce.

There were 24 cases of injury to forests by fire, involving 51 persons.

11. *Yield and working.*—The comparative table below shows the number of trees, with their contents in cubic feet, felled and disposed of :—

	In hand.		*Felled.*		*Total.*		*Disposed of.*		*Closing balance.*	
	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
Central Circle ...	1,863	45,788	58,855	250,876	60,718	296,664	57,050	244,974	3,668	51,690
1878-79 ...	2,319	45,054	46,249	392,346	48,568	437,400	46,705	391,612	1,863	45,788
Oudh Circle ...	7,443	340,068	59,016	163,534	66,459	503,602	66,159	497,602	300	6,000
1878-79 ...	13,229	334,150	34,643	265,871	47,872	600,021	43,165	259,953	7,445	340,068
School Circle ...	1[illegible],982	112,177	18,204	394,206	32,186	506,383	28,212	394,400	3,974	111,983
1878-79 ...	1,426	147,537	18,774	187,816	20,200	335,353	6,215	223,176	13,982	112,177
Total ...	23,288	498,033	136,075	808,616	159,363	1306,649	151,421	1,136,976	7,942	169,673
1878-79 ...	16,974	526,741	99,666	846,033	116,640	1372,774	96,088	874,741	23,256	498,033

In para 8 of the orders on the report for 1878-79 it was asked that the total yield of the circle compared with former years, with the reasons for increase or decrease, might be fully explained, but this has apparently been overlooked, and should be done in future. In the Central Circle 47,302 trees were kokat, cut in thinning forests in the Kumaun Division, and mostly poles or saplings. 4,179 were sal. 34,449 sal trees were cut in the Oudh Circle, but of these only 2,412 were matured trees, *i. e.*, over 6 feet in girth ; the rest were nearly all thinnings of from 3 feet to 1½ feet and under 1½ feet. 18,951 asna trees were felled, also, mostly of small size. In the School Circle, 2,683 deodar and 23 chir trees only were felled as mature crop, the remainder, consisting of sal, fir, oak, sain, khair, and kokat, were all removed as thinnings.

12. The number and contents of logs and sleepers and other scantlings, cut and exported, is shown in the following table :—

	On hand.	Cubic feet.	Number felled.	Cubic feet.	Number disposed of.	Cubic feet.	Closing balance.	Cubic feet.
Central Circle...	72,710	124,044	48,415	97,614	93,590	181,741	27,535	39,917
Oudh „ ...	296,102 and 16 stacks.	746,087	150,994 24 stacks	641,878	196,505 30 stacks	743,847	250,591 10 stacks	644,118
School „ ...	30,718	175,839	114,607	316,400	81,527	265,204	63,798	227,035

13. The following are the statistics and accounts for timber and other produce brought to depôt during the year :—

Circle.	Description of timber, &c.	Balance in hand.	Brought to depôt during the year.	Total.	Lost or used by the depôt.	Removed by purchasers.	Balance.
Central.	Timber	37,373	112,444	149,817	22 691	93,861	33,265
	Bamboos	280,885	38 796	319,681	21	308,664	10,996
	Kiras and Kurias	19,357	24,077	43,434	373	34,289	8,772
	Firewood and charcoal (maunds) ...	2,818	60,273	63,091	55	61,997	1,039
	Grass (bundles)	85,000	...	85,000	33,700	27,608	23,692
	Baskets	...	1,301	1,301	...	518	783
	Lime	...	90	90	10	72	8
School.	Timber	71,093	81,036	152,129	29,190	94,034	28,905
	Fuel	105,075	90,434	195,509	18,052	113,497	63,960
	Charcoal	...	298	298	...	...	298
Oudh.	Timber	8,425	7,237	15,662	7,323	1,302	7,037
	Golas and balls	8,532	2,419	10,951	809	6,025	4,117
	Canoes and boats	505	648	1,153	86	21	1,046
	Scantlings	49,963	169,530	217,493	2[illegible],744	153,151	38,598 cub. feet.
	Charcoal	2,902	3,831	6,733	1,521	4,614	597 maunds.
	Fuel	11,703	28,840	40,543	15,712	12,795	12,036

The value of timber and other produce sold was for the—

	Rs.
Central Circle	1,76,980
Oudh „	2,42,410
School „	2,16,324

A large number of trees were also given free to villagers as usual.

14. The following statement shows the revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from the depôt during the year :—

	Amount of revenue.			Cost of Forest Department.			Comparison of revenue and expenditure.		
	Due.	Received.	Outstanding.	Timber expenses under A.-I.	Quota of all others, &c.	Total.	Surplus.	Deficit.	Remarks.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Central Circle ...	30,581	30,581	...	19,193	2,824	22,017	8,564	...	
Oudh " ...	1,25,386	1,24,291	569	43,275	12,077	55,352	71,381	431	
School " ...	2,05,392	2,05,392	...	82,455	34,103	1,16,558	88,834	...	

15. The value of the timber and live and dead stock belonging to the Forest Department at the commencement and end of the year, the amount received, and the amount disposed of, are shown in the table below :—

Circle.	Description of timber and other stock.	On hand at commencement of year.		Received during the year.		Sold or otherwise disposed off.		On hand at close of year.	
		Number	Value.	Number.	Value.	Number.	Value.	Number.	Value.
			Rs.		Rs.		Rs.		Rs.
Central.	Timber, including fuel	38,162	70,731	1,29 329	1,88,325	117,341	1,89,778	50,150	69,878
	Bamboos ...	280,885	1,309	38,796	301	308,685	1,551	10,996	59
	Buildings ...	42	45,278	6	5,790	2	1,815	46	49,253
	Tools and plant ...	22,434	18,176	2,535	3,030	1,363	2,890	23,606	18,316
	Elephants ...	6	9,500	...	...	...	...	6	9,500
	Bullocks ...	31	489	2	40	3	57	30	472
	Country carts ...	15	293	...	...	...	...	15	293
	Ordnance stores ...	lbs. 635 gunpowder and fuze.	985	...	...	122	190	513	795
							Total,	1879-80, 1878-79,	1,48,566 1,36,161
School.	Timber of all kinds ...	71 093		81,036		124,124		28,005	
	Fuel	105,075	1,20,002	90,434	1,46,779	131,549	2,19,469	63,960	47,312
	Charcoal... ...	...		298		...		298	
	Surveying and other instruments	21	170	38	342	...	...	59	512
	Machinery ...	5	50	3	19	...	10	8	59
	Tools	3,136	4,348	677	2,074	213	577	3,600	5,845
	Office furniture ...	69	740	76	387	...	...	165	1,127
	Tents	13	1,197	2	200	1	421	14	976
	Building materials, &c.	88	25,551	14	24,571	8	2,489	94	47,633
	Miscellaneous ...	333	794	31	151	35	112	329	833
	Elephants ...	3	6,800	...	...	...	...	3	6,800
							Total,	1879 80, 1878-79,	1,11,097 1,59,652
Oudh.	Surveying and other instruments.	38	980	7	10	...	...	45	990
	Machinery ...	24	27,000	...	...	...	...	24	27,000
	Tools	3,823	3,996	589	155	310	159	4,102	3,992
	Office furniture ...	591	1,927	99	315	11	14	679	2,228
	Tents and equipages,	47	1,474	14	640	6	35	55	2,079
	Building materials ...	196	1,448	4	32	6	369	194	1,111
	Miscellaneous ...	398	2,015	155	1,469	30	1,149	523	2,335
	Boats, canoes, and carts.	1,151	63,940	38	5,320	124	7,720	1,065	61,540
	Buildings ...	18	36,500	3	9,000	...	...	21	45,500
	Elephants ...	5	13,300	3	6,900	...	...	8	20,200
	Bullocks ...	12	310	...	...	4	110	8	200
	Buffaloes ...	32	320	2	20	10	100	24	240
	Timber, including fuel,	...	1,90,560	...	...	...	...	...	1,47,600
							Total,	1879-80, 1878-79,	3,15,015 ...

16. *Financial results.*—The Financial results of the year, as compared with those of the previous year, were as follows :—

	Receipts.		Expenditure.		Surplus.	
	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle ...	4,93,405	3,67,601	2,96,679	2,32,234	1,96,726	1,35,367
Oudh " ...	3,06,570	3,84,923	2,39,602	2,45,547	66,968	1,39,376
School " ...	3,26,780	2,87,442	2,73,697	2,38,813	53,083	48,629
Total ...	11,26,755	10,39,966	8,09,978	7,16,594	3,16,777	3,23,372

The receipts were derived from the following sources :—

	I.	II.	III.	IV.	V.	VI.
	Timber and other produce, &c.	Timber and other produce removed, &c.	Confiscated, drift or waif wood.	Revenue from forests, &c.	Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle ...	1,76,980	1,84,132	2,778	...	3,711	3,67,601
Oudh " ...	2,42,410	1,37,521	2,727	...	2,265	3,84,923
School " ...	2,16,324	69,069	739	...	1,310	2,87,442
Total ... 1879-80,	6,35,714	3,90,722	6,244	...	7,286	10,39,966
Total ... 1878-79,	7,55,245	3,62,721	3,704	...	5,085	11,26,755

The revenue in each division as compared with that of last year was as follows :—

Circle.	Division.	1878-79.	1879-80.	+ or —
		Rs.	Rs.	Rs.
Central ...	Naini Tal	17,155	21,426	+4,271
	Ránikhet	53,364	7,165	—46,199
	Kumaun	1,70,856	1,65,574	—5,282
	Garhwál	1,31,875	...	—131,875
	Bhagirathi	1,02,822	50,970	—51,852
	Bijnor	8,748	1,11,795	+103,047
	Jhánsi	2,610	3,648	+1,038
	Lalitpur	5,975	7,023	+1,048
	Direction	...	...	...
Oudh ...	Direction	1	...	—1
	Bareilly	4,098	8,716	+4,618
	Kheri	2,09,121	2,75,936	+66,815
	Bahraich	48,228	44,098	—4,130
	Gonda	10,066	19,942	+9,876
	Gorakhpur	35,056	36,231	+1,175
School ...	Jaunsar	2,62,436	43,875	—2,18,561
	Dehra Dún	48,491	41,482	—7,009
	Sahárunpur	15,853	31,505	+15,652
	Tons	...	1,70,580	+1,70,580
	Direction	...	...	...
	Total ...	11,26,755	10,39,966	—86,789

17. The receipts in the Central Circle fell off by no less than Rs. 1,25,804, and the surplus by Rs. 61,539. The Government of India remarked on the last report that the gross revenue of the Forest Department in the North-Western Provinces and Oudh had remained nearly stationary during the last ten years, and did not apparently show any indication of increase, and that this did not compare favourably with the steady increase in other provinces. The Secretary of State, in his despatch No. 53, dated 15th July, 1880, has also commented on the large and continuous reduction in the surplus revenue of the Forest Department. Mr. Greig has noticed the question at some length, and has, in His Honor's opinion, satisfactorily accounted for the diminished revenue, in the North-Western Provinces proper, complained of. In the present year the falling off is due to the Ránikhet Division, where receipts were Rs. 46,199 less than in 1878-79, owing to so few troops being at Ránikhet and the stoppage of public works. The Commissariat Department took only about ⅛th of the amount of fuel they did in 1878-79. There was also a decrease in the sale of deodar sleepers from the leased forests of Rs. 96,018, for which the Department cannot be held responsible. Mr. Greig has reviewed the income for the past fifteen years. For the five years 1864-65 to 1868-69, the average gross receipts were Rs. 6,06,389; for the five years 1869-70 to 1873-74, Rs. 10,79,363; and for the years 1874-75 to 1878-79, Rs. 9,13,262. The net receipts for the same periods were Rs. 2,66,129, Rs. 2,68,347, and Rs. 2,75,504, respectively. But up to 1876-77 a considerable income was realized from the sale of sál timber, felled previous to the existence of the Department, which was lying in the forests, and from the timber cut on forests cleared for cultivation. From 1871-72 to 1875-76 the sale of deodar sleepers for State Railways was very large, and far outran what could be expected to be the maximum average annual yield. Deodar fellings have now been in a great measure stopped, and the revenue has suffered accordingly. Mr. Greig, in the 44th para. of his report, gives statistics to prove that the forests in the North-Western Provinces give more revenue in proportion to their area than those of the Central Provinces, Bengal, or Assam, which, according to the tables given in the Inspector-General of Forests' review of forests under the Administration of the Government of India during the year 1878-79, appear to be making most progress. If the only object were to raise the greatest possible amount of revenue for a few years, this could easily be done at the expense of the future by increasing the number of fellings; but one of the chief aims in creating a Special Department for the management of the forests is to ensure that a permanent supply of timber is kept up, and with this view it may often be necessary to curtail or even stop altogether the felling of trees where this has been excessive in the past, leading though it must to a temporary decrease at any rate in income. During the last two years bad seasons, the very general sickness prevalent, and the consequent impoverishment of the people and lessened demand for forest produce, have also told considerably against the department, and these are causes which no effort on its part can remove. Still Mr. Greig claims that the actual profits of the year are Rs. 36,719 more than in 1878-79, as shown in the statement further on.

18. The increased surplus in Oudh, Rs. 72,408 more than last year, is due to arrears of revenue for timber having been paid up, as also arrears of grazing dues in Gonda and Bahraich and better sales generally. Captain Wood, in paras. 40-44, and appendices 2 and 3 of his report, also contrasts the revenue obtained from the Oudh forests for the past 16 years, and shows not only that there has been a steady and marked improvement in the revenue, but that it is far greater in proportion than that for the forests under other Governments, which the Government of India have said compare favourably with those in the North-Western Provinces and Oudh. Forest revenue does not admit of an indefinite expansion, and naturally it is much easier for undeveloped forests with a low income hitherto, to show an increase, than for those which have been fully worked or overworked for some time past and have already attained a high limit. It is to be hoped that Captain Wood's sanguine expectations that the revenue of the Oudh Forests will improve, may be realized. The question of whether the limit fixed for fellings in the trans-Sarda sub-division of Kheri needs modification, will doubtless receive attention from the Inspector-General, whose opinion was asked in G. O. No. 367, dated 17th March, 1880, a reply to which has not yet been received. Captain Wood has submitted his views at length in his letters of 7th and 18th August, where he also discusses the rate of growth of sál, which he thinks is much more rapid than that hitherto assumed. These will be forwarded to the Government of India for consideration and orders. His Honor agrees that the matter is a most important one, and should be fully investigated and decided without loss of time, as, if Captain Wood's suppositions are correct, a large amount of revenue is being lost.

The Lieutenant-Governor has prominently noticed the representations of Captain Wood and Mr. Greig regarding the results obtained in respect of fire conservancy and the development of forest revenue, because he thinks they should convince the Government of India that the Forest Department of these provinces was not deserving of the depreciating comments made in paras. 6 and 10 of its review of the administration during 1878-79. Sir George Couper regrets that in those representations it should have been necessary to draw comparisons between the results in the North-Western Provinces and Oudh and those in other provinces, but this was unavoidable, seeing that the comparisons were primarily instituted, not by the Lieutenant-Governor or his officers, but by the Government of India and the Head of the Forest Department in the criticisms which have called for the explanations now offered.

19. In the School Circle, receipts were Rs. 39,338, and the surplus Rs. 4,454 less than in 1878-79. The revenue here is chiefly dependent on sales to the Public Works Department and the supply of railway sleepers. When the valuation surveys in progress have been completed, it will be possible to determine what the annual outturn may be expected to be in future: until this is done, the revenue must necessarily be fluctuating and uncertain.

20. The expenditure in each division compares thus with that of last year :—

Circle.	Division.	1878-79.	1879-80.	+ or —
		Rs.	Rs.	Rs.
Central ...	Direction	28,139	24,013	—4,126
	Naini Tal	8,292	21,005	+12,713
	Ránikhet	35,803	17,357	—18,446
	Kumaun	70,862	73,649	+2,787
	Gárhwál and Bijnór	59,339	68,255	+8,916
	Bhagiráthi	86,834	...	—86,834
	Ganges	...	21,460	+ 21,460
	Jhánsi	3,052	2910	—142
	Lalitpur	4,358	3,585	—773
	Total ...	2,96,679	2,32,234	—64,415
Oudh ...	Direction	17,478	16,567	—911
	Kheri	1,56,719	96,987	—59,732
	Bahraich	35,103	29,263	—5,840
	Gonda	3,544	6,883	—3,339
	Gorakhpur	23,419	20,509	—2,910
	Bareilly	3,339	8,176	+4,837
	Bhira	...	16,221	+16,221
	Bahramghat	...	50,941	+50,941
	Total ...	2,39,602	2,45,547	+5,945
School ...	Direction	9,747	49,380	+39,633
	Dehra Dún	38,934	28,557	—10,377
	Sahárunpur	8,608	21,102	+12,494
	Tons	...	68,318	+68,318
	Jaunsar	2,16,408	71,456	—1,44,952
	Total ...	2,73,697	2,38,813	—34,884
	Grand Total ...	8,09,978	7,16,594	—93,384

There was thus a decrease in the Central and School Circles of Rs. 99,329, from which, deducting the increase of Rs. 5,945 in the Oudh Circle, there remains a total decrease of Rs. 93,384. The causes of variation in the Central and School Circles might have been more fully explained, as has been done in paragraph 36 of the Oudh Report.

21. Taking expenditure under the two main heads—

(a.) Conservancy and works

(b.) Establishments

the figures are :—

A.

	I. Timber and other, &c.	II. Timber and other, &c.	III. Confiscated drift, &c.	IV. Rent of leased, &c.	V. Live and dead stock.	VI. Communications and buildings.	VII. Demarcation, &c.	VIII. Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	58,943	16,387	371	4,000	8,364	24,884	24,149	486	1,37,584
Oudh "	98,891	6,014	76	...	14,270	32,608	13,406	1,267	1,66,532
School "	97,269	4,054	3	8,504	3,078	34,670	10,265	1,632	1,59,475
Total ... 1879-80...	2,55,103	26,455	450	12,504	25,712	92,162	47,820	3,385	4,63,591
Total ... 1878-79...	4,08,658	24,008	415	10,351	21,299	63,638	37,981	5,536	5,72,086

B.

	I. Salaries.	II. Travelling allowances.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
Central Circle	82,829	7,910	3,910	94,649
Oudh "	63,151	12,037	3,827	79,015
School "	66,815	9,790	2,733	79,338
Total ... 1879-80...	2,12,795	29,737	10,470	2,53,002
Total ... 1878-79...	1,96,941	29,258	11,692	2,37,891

22. The following summary shows the actual profits of the year :—

Particulars.	Amounts.
Central Circle.	Rs.
Receipts of the department during 1879-80	3,67,601
Expenditure ditto ditto	2,32,234
Surplus ...	1,35,367
Value of timber at the commencement of the year	72,040
Ditto close ditto	69,937
Difference against the year to be deducted	2,103
Balance ...	1,33,264
Value of live and dead stock at commencement of the year	74,721
Ditto close ditto	78,629
Balance to be added ...	3,908
	1,37,172
Deduct—	
Amount of revenue realized on account of previous periods	809
Balance ...	1,36,363
Add—	
Outstandings of the year *minus* bad debts	12,220
	1,48,583
Add—	
Amount disbursed on account of previous periods	*Nil.*
	1,48,583
Deduct—	
Amount due on transactions of the year but not yet paid	65
	1,48,518
Deduct—	
Outstandings at commencement of the year	10,326
Balance showing actual profits of the year ...	1,38,192
Oudh Circle.	
Receipts...	3,84,933
Expenditure	2,45,547
Surplus	1,39,386
Deduct—	
Decrease in value of timber stock	42,940
Balance ...	96,446
Add—	
Increased value of live and dead stock	14,205
Net surplus ...	1,10,651
School Circle.	
Surplus revenue of the year 48,629	
Add—	
Balance of outstandings at close of year in favor of department ... 1,04,341	
	1,52,970
Deduct—	
Decreased value of stock 48,555	
Balance of outstandings at commencement of year in favour of department... 25,824	
	74,379
Balance in favour of department ...	78,591

The actual profits for this and the preceding year therefore compare as follows :—

	1878-79.	1879-80.	+ or —
	Rs.	Rs.	Rs.
Central Circle	1,07,473	1,38,192	+ 36,7[illegible]
Oudh "	72,710	1,10,651	+ 37,941
School "	—18,766	*78,591	+ 97,357

But these figures can only be regarded as approximate. To appreciate correctly the exact results of the year's working is a matter of extreme difficulty. The value of the stock in hand and its decrease in value cannot be calculated with certainty. The accounts, too, are not balanced up at the end of the year. In the School Circle Rs. 32,000 are due to Messrs. Winton and Braidwood, and the actual profits should be about Rs. 46,000 instead of Rs. 78,000. It must also be remembered that a large income in any one year may be obtained by discounting the future. It is only when regular working plans have been formed, and the capabilities of the forest have been ascertained, that an opinion can be pronounced with any certainty as to whether an adequate income has been realized or not.

23. The following statement gives the outstandings and liabilities on account of contractors and disbursers during the year :—

	Department debtor.			*Department creditor.*			*Balance due.*	
	At commencement of year.	Recoveries in cash, &c.	At close of year	At commencement of year.	Payments made during the year.	At close of year.	To Department (outstandings).	By Department (liabilities).
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	65	43,118	43,183	10,326	45,013	55,333	12,220	65
Oudh "	983	2,79,873	2,80,855	46,511	2,55,800	3,02,312	21,527	70
School "	...	1,27,944	1,27,944	23,408	2,01,816	2,29,225	1,01,308	28

The outstandings on account of revenue were—

	Rs.
Central Circle	736
Oudh "	42,989
School "	3,061

The large outstandings in Oudh are mainly owing to the arrears of grazing dues in Bahraich and Gonda, in the recovery of which, however, considerable progress has been made since the close of the year.

24. The statement below compares last year's and this year's work at the Balframghat Saw Mills.

Year.	Value of work done at hand-labour rates.	Expenditure.	Surplus.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
1878-79	13,661 14 6	10,367 2 11	3,214 15 8
1879-80	13,997 5 9	10,129 9 11	3,872 11 10
Increase in surplus ...	...	...	577 12 2

* Really Rs. 46,591.

The cost of sawing per 100 cubic feet was Rs. 13⅓ as compared with Rs. 16¾ last year and over Rs. 20 the year before. The Patna contract has nearly been completed, and the work of the mills is now progressing satisfactorily under Babu Kanhaya Lal, who is most favourably reported of.

25. The Chandi and Patri nadi forests have recently been taken away from the Superintendent, Roorkee Workshops, and placed under the forest officer in charge of the Ganges Division. This is in accordance with the course suggested by Mr. Greig in para. 25 of his report, as it is clear the management has not hitherto been satisfactory.

26. *General remarks.*—On the whole His Honor sees no reason to be dissatisfied with the results of the year. The forests have now been gazetted, and nearly all the rules required under the Act, issued. The next great step is the preparation of working plans, for which data are being collected, but the work is one involving much time and labour. For the majority of the forests, only preliminary working plans are at present practicable, and instructions were issued to Conservators for the preparation of these in Resolution No. 365, dated the 17th March, 1880, copy of which has been sent to the Inspector-General, who replied in his No. 51, dated 16th July, 1880, that he had not yet been able to take up the subject. As the question of the Oudh fellings, referred to above, is of great importance, His Honor trusts he will soon be able to do so.

27. His Honor has already expressed his opinion that the working of the Department would be greatly improved if placed entirely under the Local Government, and can only repeat what has already been said. The staff of officers is also inadequate, and the measures lately taken for localizing the superior staff have not tended to increase efficiency so far, owing to the very numerous transfers which have been made. Sir George Couper trusts the complement of officers may shortly be raised to its proper strength, and that they may be left long enough in the provinces to become thoroughly acquainted with their charges, an indispensable condition to good administration.

28. In para. 11 of the orders of the Government of India on the last report it was remarked that it appeared to the Governor-General in Council, that the reports submitted by the Conservators might with advantage be condensed and shortened, and it was suggested that, as regards the arrangement of the report and the returns appended to it, the reports of Forest Administration in Assam for 1877-78 and 1878-79 might usefully be taken as a pattern. His Honor thinks it must have been overlooked that a separate report with separate statements is required for each of the three circles under this Government, and that no one of these reports is so long as the Assam Report. But it seems desirable that the form of report should be authoritatively settled, and there can be no doubt the present plan of showing the results for each division separately under each head instead of for the division as a whole, is in many respects inconvenient. Doubts have also been expressed whether the opening chapter should be a summary of the succeeding ones, as it is in the

Assam Report, or a separate chapter in itself, as in the Inspector-General of Forests' review of Forest Administration in India for 1878-79, dated 28th January, 1880. The rules for the preparation of annual reports are laid down in para. 189 of the code, but these might with advantage be made more explicit. The subject was noticed at some length in para. 21 of the orders on the last report, but no Conservator has given a clear and concise account of the exact position of the forests of his circle as a whole, their area, works of improvement, &c., yield and working, income and expenditure during the year, with full explanation of the variation under each head, as there requested. In so far as the arrangement of the reports is defective, the Lieutenant-Governor and Chief Commissioner does not think the Conservators are to blame, for the Government was itself at a loss how best to give effect to the wishes of the Government of India in face of the contradictions between the instructions in the code, the arrangement of the Assam report which had been commended as a model, and the form of the review of the Inspector-General, which was subsequently published. It appears to the Lieutenant-Governor and Chief Commissioner that this should be done in the opening chapter, which should be a report for the circle as a whole on the same model as the divisional reports, and should furnish Government with complete information under each head for the forests of the circle taken collectively. The divisional reports might then follow, arranged as laid down in the code, but complete in themselves and not arranged primarily under heads: at present the results for a circle are not brought out with a sufficient prominence or sufficiently discussed by Conservators, and a reference to all the divisional reports is required for their comprehension. The financial results are involved in much obscurity and should be more clearly stated if possible. A mere increase in revenue or expenditure is no real test of the working of the year, unless the causes which have led to it are fully explained, owing to the abnormal and uncertain character of many of the principal items. The assumed value of stock or its deterioration in value are also factors on which very great dependence cannot be placed without some knowledge of the data on which calculations are based, and expenditure on works of improvement, though it may lead to larger revenue hereafter, must diminish the apparent surplus.

The orders of the Government of India will be asked as to the precise form in which the value of the year's transactions should be shown, and instructions communicated in due course.

The yield of timber, distinguishing mature trees from fellings, and comparing it with that of former years, should be stated. The divisional figures under the various heads do not always admit of exact comparison in consequence of the frequent changes of late, and hence it is of the more importance that the results for the circle should be clearly shown.

29. Sir George Couper is glad to find that the conduct of forest officers of all grades is, as a rule, favourably reported on. The thanks of Government are due to the Conservators of all three circles for the

efficient manner in which they have discharged their duties during the year.

G. E. ERSKINE,
Secy. to Govt., N.-W. P. and Oudh,
in the Rev. Dept. (Forest Branch).

No. 978B.

Copy, with copy of report, forwarded to the Conservators of Forests, Central, School, and Oudh Circles, and to the Commissioners of Meerut, Benares, Jhánsi, Rohilkhand, Kumaun, Sitapur, and Fyzabad, for information.

No. 978C.

Copy, with copy of report, forwarded to the Comptroller-General, for information.

No. 978D.

Copy, with copy of report, forwarded to the Inspector-General of Forests, for information.

F. BAKER,
Offg. Under-Secy. to Govt., N.-W. P. and Oudh,
in the Rev. Dept. (Forest Branch).

No. 40 F., dated Fort William, the 15th January 1881.

From—The Honourable C. GRANT, C.S., Offg. Secretary to the Govt. of India, Home, Revenue and Agricultural Department,

To—The Secretary to the Government of the North-Western Provinces and Oudh, Revenue Department, Forest Branch.

I AM directed to acknowledge the receipt of your letter No. 1009, dated the 6th November last, forwarding the reports on the administration of the forests in the three circles of the North-Western Provinces and Oudh for the year 1879-80, together with a review thereon by His Honor the Lieutenant-Governor. No great changes are reported in the extent of the reserved forests, the aggregate area having increased from 3,260 to 3,279 square miles by small additions in the Oudh and School Circles.

2. As regards demarcation, the Conservator of Forests in the Central Circle reports good progress in marking the boundaries of those blocks in the Kumaun Division which are open for the exercise of recorded rights. In the Oudh Circle the boundaries of a considerable portion of the Bahraich forests were finally determined and marked on the ground, and in the School Circle progress is reported in demarcating some of the leased forests.

3. Large additions have been made to the area protected from fire, and the failures have been few, and not extensive. The total area protected was 423,169 acres, at a cost during the year of Rs. 22,449, or Rs. 53 per 1,000 acres on an average. The total area of reserved forests is 2,098,560 acres, and the protected area is thus 20 per cent. of the total.

4. In paragraph 6 of the letter from this Department No. 1033 F, dated the 30th December 1879, communicating orders on the Annual Forest Report of the North-Western Provinces and Oudh for 1878-79, the Government of India remarked that fire conservancy had not made any marked progress in the three years from 1877 to 1879. It is satisfactory to observe that a new start has now been made, and the Governor General in Council trusts that equally good progress will be maintained in future. The Government of the North-Western Provinces and Oudh say, in paragraph 8 of their review, that in the Central Provinces 5½ per cent. only of the reserved forests were protected against fire. This statement appears to be based upon a misconception of the real state of things. Of the first class reserved forests in the Central Provinces, which it is intended permanently to maintain as forest, and which alone can be properly compared with the reserved forests of the North-Western Provinces and Oudh, considerably more than one-third of the area was protected in 1878-79, and nearly one-half in 1879-80. In the second class reserved forests systematic protection against fire is not attempted, and the returns of fire protected areas do not relate to this class of forests.

Comparisons between the success attained in the principal operations of forest administration are useful, if they are based upon due knowledge of the local details in the Provinces, the administration of which is compared. If, on the other hand, such comparisons are based upon imperfect data, they are useless and may be misleading.

5. Under plantations good work is reported from the different circles. The area was increased by the addition of 310 acres, so that, at the close of the year, the total area of plantations aggregated 2,262 acres. It is presumed that these figures only include areas sufficiently stocked, and if this is the case, the results recorded in the reports may be regarded as very satisfactory.

6. Good progress is reported in road-making. In the Central Circle the completion of the cart-road up the Nindhore valley and the bridle-road along the top of the outer range have been noticed. In the Oudh Circle it is recorded that 403 miles of old roads and 103 miles of fire-paths were kept up; that 20 new bridges have been made and replaced; and that 90 miles of new roads were taken in hand and mostly completed.

In the School Circle 56 miles of fair-weather cart-roads were made in the Dehra Dun Division, and 22½ miles of road newly made or improved in the Saharanpur Division, besides the maintenance and improvement of the roads and inspection paths in the hills of the Jaunsar and Tons Divisions.

7. As regards the yield of the forest in material, the number of trees cut by departmental agency seems to have been as follows, if the figures of the statements appended to the report are correctly understood:

		Number of trees cut.		
		Mature crop.	Thinnings, clearances on lines, &c.	Total.
Central Circle ...	Sal ...	4,179	...	4,179
	Chir ...	1,123	...	1,123
	Teak ...	575	...	575
	Other kinds ...	2,581	50,397	52,978
	Total ...	8,458	50,397	58,855
Oudh Circle ...	Sal ...	2,412	32,037	34,449
	Asna ...	...	18,951	18,951
	Other kinds ...	98	5,518	5,616
	Total ...	2,510	56,506	59,016
School Circle ...	Deodar ...	2,683	...	2,683
	Chir	23	...	23
	Sal ...	...	9,230	9,230
	Other kinds ...	...	6,268	6,268
	Total ...	2,706	15,498	18,204

It is not, however, certain whether the figures of the statements have been correctly understood.

8. If the Honourable the Lieutenant-Governor sees no objection, it would be well if, in future reports, the produce of the different classes of operations could be kept distinct in the returns appended to the report. Thus, the number of trees cut in the selection fellings, in clearances on lines roads or elsewhere, thinnings, improvement cuttings, &c., might with advantage be shown separately.

9. The financial transactions of the year have been duly entered by Conservators of Forests under the three great heads suggested by the Government of India, and the figures stand as follows:

	Central Circle.		Oudh Circle.		School Circle.	
	Receipts.	Charges.	Receipts.	Charges.	Receipts.	Charges.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—Departmental timber operations	1,76,980	96,837	2,42,410	1,32,786	2,16,324	1,17,578
II.—Other revenue ...	1,90,621	48,470	1,42,513	32,849	71,118	26,829
III.—Formation, protection and improvement of forests	...	86,927	...	79,912	...	94,906
Total ...	3,67,601	2,32,234	3,84,923	2,45,547	2,87,442	2,38,813

The result for the three circles is—

	Receipts.	Charges.
	Rs.	Rs.
I.—Departmental timber operations ...	6,35,714	3,47,201
II.—Other revenue	4,04,252	1,07,648
III.—Formation, protection and improvement of forests	.....	2,61,745
Total ...	10,39,966	7,16,594

10. These are the figures for one year only, which cannot, as a matter of course, be expected to justify any conclusions regarding the financial results of forest administration. But by grouping together the figures of a series of years, in a statement similar to that recorded in paragraph 15 of the report by the Inspector General of Forests, regarding the working of the Trans-Sarda forests in Oudh, reliable and useful results may be obtained, and this method is recommended for adoption.

11. The gross revenue for the year compared with that of previous years was as follows:

	Rs.
Five years from 1864-65 to 1868-69 (average) ...	7,21,214
Ditto from 1869-70 to 1873-74 (ditto) ...	12,60,205
In 1874-75	13,63,358
In 1875-76	12,64,356
In 1876-77	11,50,671
In 1877-78	12,03,108
In 1878-79	11,26,755
In 1879-80	10,39,966

In paragraph 44 of his report Mr. Greig explains that, during the five years from 1871-72 to 1875-76, the gross receipts of the forests of the North-Western Provinces were exceptionally high, because during that period exceptional fellings of Deodar were made in order to supply sleepers to State Railways, and that the trees felled during this period probably represented the annual yield of some 50 years or more. This explanation, which is borne out by the

figures quoted above, is valuable, inasmuch as it throws light upon the decrease of revenue during the last nine years. But making due allowance for the effect of these extraordinary cuttings in swelling the revenue, it appears that, during the last four years, the gross forest revenue of the North-Western Provinces and Oudh has not shown any tendency to increase, but has rather diminished.

12. The account of the good work done at the Bahramghat Saw-mills, and the prospect which the successful working of the mills furnishes of an increasing revenue from the Oudh forests, is satisfactory.

13. In paragraph 28 of their review the Government of the North-Western Provinces and Oudh express a wish that the rules for the preparation of annual reports, laid down in paragraph 189 of the Forest Department Code, should be made more explicit. The Governor General in Council does not at present think it necessary to prescribe any more detailed rules on this subject. The fact that, as already pointed out in the orders on the report for 1878-79, the Conservators of Forests in most Provinces furnish in their annual reports a clear and connected account of the forest administration in their respective charges, seems to His Excellency in Council to be sufficient proof that no further instructions on the subject are needed. The reports now under review are much better arranged than those of previous years, but they are still too much broken up by figured statements, often of no great importance, and by numerous headings, and in this respect they are capable of further improvement.

14. In conclusion the Governor General in Council is glad to acknowledge the interest which the Honourable the Lieutenant-Governor has taken in the progress of forest administration in the North-Western Provinces and Oudh. In developing the organization of that important branch of the public service, the Government of India desires to entrust the Local Government with large powers, reserving to itself only the appointment of Conservators of Forests and a few matters involving questions of principle and general policy. But the measures designed to give effect to these views cannot be completely carried out without some necessary delay. The localization of the superior staff has so far only been partially completed, as some questions connected with it are still under reference to the Home Government. His Honor the Lieutenant-Governor may, however, rest assured that it is the intention of the Government of India to place forest administration in the North-Western Provinces and Oudh under the control of the Local Government as completely as is consistent with due regard to the public interests.

D. N. M.—Home, Rev. & Agri. Dept. Press—No. 902—21-1-81—250.

CENTRAL CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION
FOR THE YEAR ENDING 31st MARCH, 1880-81.

By G. Greig, Esq., Conservator of Forests, Central Circle.

CHAPTER I.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

SECTION 1.—AREA AND BOUNDARIES.

1. The areas of the forests are given in form No. 49. They are the same as last year, with the exception of the addition of the Chandi block, 32 square miles, which was taken over from the Superintendent of the Roorkee Workshops on the 1st November, 1880, and attached to the Ganges Division. This area was included in the Bijnor Division in last year's form No. 45, and therefore there is no change in the *total* area of the forests. None of the areas have yet been accurately calculated by the Forest Survey Department.

2. Demarcation.—Considerable progress has been made in demarcation work during the year, as may be seen by a reference to paras. 22, 37, 53, 54, 73, 74, 75, 88, 89, 90, and 92 of this report. A summary of the work therein described here follows :—

(*a.*) **Naini Tal Division.**—The whole of the boundaries were completely demarcated; but the heavy rain of September, 1880, washed away two of the outer boundary pillars and 86 of the smaller pillars which demarcate village lands within the forests, and, owing to the landslips, these cannot be rebuilt until their positions are determined by survey (see para. 22).

(*b.*) **Ranikhet Division.**—The outer boundaries are all demarcated, and so are the village lands within forests, except a few plots which, at the close of the year, had not been quite finished (see para. 37).

(*c.*) **Kumaun Division.**—All the outer boundaries are demarcated, except four pillars required for the western portion of the Hurai forest, and a few in the Talla Des range in Eastern Kumaun. Sixty-seven pillars were erected during the year.

The boundaries of village lands within the forests are being demarcated in the Chilkia and West Kotah ranges, and very little remains to be done. All has been finished in the Chakhata and Chaubhainsi ranges. In the Talla Des range the boundaries of 29 village lands have yet to be determined by the district officer. One hundred and thirty-three pillars were erected during the year.

The boundaries of the portions of the reserved forests which are open to the exercise of recorded rights are being demarcated by 50-feet lines, 2-feet paths, and pillars.

During the year 8 miles and 50 chains of 50-feet lines and 15 miles and 43 chains of 2-feet paths were made and 66 pillars were erected. The work was finished in the Chilkia, West Kotah, and Chakhata ranges, and almost completed in the Chaubhainsi and Tallades ranges (see paras. 53 and 54).

(*d.*) **Garhwal Division.**—The main pillars of the outer boundaries are all of stone and lime, but the intermediate ones, which are at present only kucha, have yet

to be built. The same remarks apply to the boundaries of village lands within the forests. They have all been demarcated as above, except the three plots of Kotirao, Jhirna and Dhárón.

The boundaries of the portions of the reserved forests which are open to the exercise of recorded rights have been demarcated by stone and lime pillars, and 6-feet paths are being cut from pillar to pillar.

All the pillars have yet to be numbered (see paras. 73, 74 and 75).

(*e.*) **Ganges Division.**—The outer boundaries are permanently demarcated, but in some places a few intermediate pillars are required.

In the Khara block 30 large and 113 intermediate pillars were erected to demarcate the village lands within the forests. All village lands between the Hiul and Bhinj rivers have been demarcated, and the work will probably be completed as far eastward as the Rawásan river before the rains of 1881 (see paras. 88, 89 and 90).

(*f.*)—A reference to para. 92 will show what was done towards demarcating and recording the rights in the leased forests. The delay in this work is entirely due to the Rája not having replied to the Government letter which submitted the Conservator's report.

(*g.*)—The Jhánsi and Lalitpur forests are permanently demarcated.

SECTION 2.—PROTECTION AND IMPROVEMENT.

3. On the 1st April, 1881, the superior staff consisted of—

1 Conservator.
2 Deputy Conservators.
3 Assistant Conservators.
6 Officers.

For subordinate forest and office establishment a monthly maximum amount of Rs. 3,022 was sanctioned for 1881-81.

4. The following shows the permanent forest and depôt establishments sanctioned for the different divisions:—

		Rangers.	Foresters.	Guards.
Naini Tál Division	...	...	1	12
Ránikhet ,,	...	...	2	19
Kumaun ,,	...	1	14	58
Garhwál ,,	...	1	12	48
Ganges ,,	...	...	6	26
Jhánsi ,,	...	...	1	12
Lalitpur ,,	...	...	1	21

5. The office establishment consists of 24 clerks, including munshis, and 6 daftris and chaprasis.

6. Breaches of forest rules.—During the year there were 388 prosecutions, in which 828 persons were implicated. Convictions were obtained in 336 cases, including 663 persons. Kumaun Division heads the list with 221 prosecutions, Garhwál comes next with 59, Ránikhet 37, Jhánsi 30, Naini Tál 23, Lalitpur 12 and Ganges 6. Full details are given in Form No. 52.

7. Roads and bridges.—All existing roads have been repaired and some improved, and the following new roads have been made:—

(a.) **Naini Tal Division—**

One road 5 feet broad, 1 mile 10 chains long, cost Rs. 78.
,, ,, 5 ,, ,, 2 mile 67 ,, ,, ,, ,, 131 (see para. 26).

(b.) **Kumaun Division—**

One road 18 feet broad, 7 miles long.
,, ,, 12 ,, ,, 3¾ ,, ,,
,, ,, 36 ,, ,, 2¾ ,, ,,
,, ,, 4 ,, ,, 6 ,, ,, (see para. 57).

(c.) **Ganges Division**—

Two roads 17 miles in length, cost Rs. 192 (see para. 95).

8. BUILDINGS.—The following were constructed during the year :—

(a.) **Naini Tal Division.**—The two large iron-roofed sheds for storing timber and charcoal, which were mentioned in para. 13 of last year's report, were completed.

The former cost Rs. 2,560 and the latter Rs. 2,344. An iron-roofed forester's hut was built at the timber depôt; it cost Rs. 252. A temporary wooden guard's hut was built in the Hinnan forest; it cost Rs. 20. An iron roof was put on the guard's hut at China; cost Rs. 65 (see para. 27).

(b.) **Lalitpur Division.**—Three new depôt chaukis were built; cost Rs. 99 (see para. 125)

9.—REPRODUCTIVE MEASURES—

Naini Tal Division.—2,300 young deodars, 2,500 walnuts, and 3,417 horse-chestnuts were brought from the Ránikhet nursery and planted; 10,500 seed patches were sown with two kinds of acorns, *Quercus lanuginosa* and *Quercus incana* Rs. 707 were spent on plantation work during the year (see para. 28).

10. **Ranikhet Division.**—During the year 264lb. of fruit-tree seed, 120lb. of forest-tree seed, and 396lb. of hedge-bush seed were sown; 6,854 deodar and 2,203 oaks were planted out to fill vacancies; 18,163 forest trees and 4,197 grafted fruit trees were distributed gratis. The stock in the nursery consists of 220,261 forest trees and 79,087 fruit trees. The cost of the plantation work during the year was Rs. 1,680. For further detail see paras. 42 and 43.

11. **Kumaun Division.**—A little tún seed was sown at Dhungalgarh. Sál seed was not obtainable. A lot of mulberry cuttings and about 80 plants of *Swietenia Mahogani*, *Sterculia tricosiphon*, *Rhus Thunbergi*, *Catalpa bignonioides* and four kinds of *Eucalyptus* were received from the Saháranpur Botanical Gardens and planted. The mulberries are doing remarkably well, and there would be no difficulty in forming large plantations of them if they are ever required for sericulture. Many of the other trees are also growing very well, but I cannot see the object of cultivating them. Rs. 582 was spent on plantation work during the year (see paras. 59, 60 and 61).

12. **Jhánsi Division.**—200 sisham and 70 teak trees were planted, and some mahua, teak and babul seed was sown in five different places. The cost of the plantation work during the year was Rs. 472 (see paras. 114, 115 and 116).

13. CUTTING CREEPERS AND WORTHLESS TREES.—The only work done under this head was in the Kumaun Division. Worthless trees were cut out over an area of 800 acres of the Mowa-ár sál forest, and creepers were cut over 3,370 acres of the Garibulchand sál forest (see para. 62).

SECTION 3.—YIELD AND WORKING.

14. The following statements show the timber operations of the year :—

(*a*)—*Trees felled by departmental agency.*

Division.	Mature sál.	Sál poles.	Mature sein.	Mature jaman.	Mature gosam.	Mature pine.	Pine poles.	Oak, rhododendron and ayar.	Miscellaneous mature.	Miscellaneous poles.	Deodar (dead trees).	Teak.	Bor.
Naini Tal	...	...	...	...	...	1,003	...	642	195	...	...	...	...
Ránikhet	...	...	...	...	...	247	233	291	230	...	...	...	...
Kumaun	2,969	177	...	52	92	21	...	...	682	...	...	...	...
Garhwál	46	...	1,608	...	...	...	...	...	...	...	...	...	...
Ganges	...	...	830	...	...	...	...	...	137	13,628	1,901	...	121
Jhánsi	...	...	...	...	...	...	...	...	...	806	...	...	...
Lalitpur	...	...	...	...	...	...	...	...	...	2,276	...	96	...
Total ...	3,015	177	2,438	52	92	1,271	233	933	1,244	16,710	1,901	96	121

(b)—Trees given free to village right-holders and to the Executive Engineer, Kumaun Provincial Works; for repair of bridges.

Division.	Sál poles.	Deodar (dead trees).	Mature pine.	Pine poles.	Oak, &c.	Miscellaneous mature.	Miscellaneous poles.
Naini Tál	3	...	16	49	23	7	707
Ránikhet	...	...	587	5,142	1,070	13	9
Ganges	...	60	647	...	...	114	...
Total ...	3	60	1,250	5,191	1,093	134	716

(c)—Timber removed by purchasers.

Division.	Sál.	Sein.	Sisham.	Sandan.	Tún.	Khair.	Deodar.	Pine.	Other kinds.
	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.	Cub. ft.
Naini Tál ...	...	...	...	...	...	...	...	...	2,031
Ránikhet ...	...	...	...	...	...	...	...	53,490	...
Kumaun ...	92,268	3,307	5,221	757	727	27,257	...	...	29,346
Garhwál ...	71,331	3,977	858	8,021	703	13,062	...	...	18,076
Ganges ...	15,487	...	...	...	...	...	4,000	25	31,140
Total ...	179,086	7,284	6,079	8,778	1,430	40,319	4,000	53,515	80,593

All the timber in the above statement, except the "khair," a portion of the "other kinds," and 115 sál trees sold to a merchant from the Garhwál Division, was the produce of fallen or dead trees.

(d)—Timber brought to depôt from the forests.

Division.	Sál logs.	Sál karis.	Sál sleepers.	Sál, other kinds.	Haldu, all kinds.	Chir karis.	Chir planks.	Sein karis.	Kukat karis.	Timber, all other kinds.	Total. Number.	Total. Cubic feet.
Naini Tal ...	...	...	...	...	...	7,610	23,883	...	...	...	31,493	29,188
Kumaun ...	424	23,331	6	762	436	...	...	...	...	868	25,827	61,583
Garhwál ...	...	...	...	53	...	...	...	9,983	...	...	10,036	17,368
Ganges ...	...	...	...	...	...	...	...	4,529	734	14,043	19,306	49,585
Jhánsi ...	...	...	...	...	...	...	...	...	...	806	806	2,418
Lalitpur ...	...	...	...	...	...	...	...	...	...	2,503	2,503	3,961
Total ...	424	23,331	6	815	436	7,610	23,883	14,512	734	18,220	89,971	1,64,103

Add :—

Naini Tál Division,	Firewood ...	33,634	mds.
	Charcoal ...	17,073	,,
	Lime ..	6	,,
Ránikhet ,, ...	Firewood ...	92,331	,,
Jhánsi ,, ...	,, ...	2,566	,,
	Charcoal ...	1,144	,,
	Bamboos ...	4,599	
	Kiras ...	3,712	
	Kurias ...	40,895	
Lalitpur ,, ...	Bamboos ...	333,040	

Firewood and charcoal ...	1,46,748	mds.
Lime ...	6	,,
Kiras and kurias ...	44,607	in number
Bamboos ...	337,639	,,

(e)—Timber removed from depôt by purchasers.

Division.	Sál logs.	Sál karis.	Sál sleepers.	Sál, other kinds.	Haldu, all kinds.	Chir karis.	Chir planks.	Sein karis.	Kukat karis.	Timber, all other kinds.	Total. Number.	Total. Cubic feet.
Naini Tál ...	...	...	...	...	...	3,323	20,119	...	...	...	23,442	17,181
Kumaun ...	204	26,437	62	766	2	...	...	...	...	2,262	29,733	55,732
Garhwál ...	...	18,560	...	54	...	...	...	3,939	...	...	22,553	32,977
Ganges ...	...	...	...	...	...	...	...	2,388	570	14,043	17,001	45,954
Jhánsi ...	...	...	...	...	...	...	...	...	...	678	678	2,034
Lalitpur ...	...	...	...	...	...	...	...	...	...	2,317	2,317	3,679
Total ...	204	44,997	62	820	2	3,323	20,119	6,327	570	19,300	95,724	157,557

Add :—

Naini Tál Division ...	Firewood ...	33,634 mds.	
	Charcoal ...	9,967 „	
	Lime ...	6 „	
Ránikhet „ ...	Firewood ...	91,235 „	
Jhánsi „ ...	Bamboos ...	3,228 in number.	
	Baskets ...	689 „	
	Kiras ...	5,589 „	
	Kurias ...	27,285 „	
	Firewood ...	1,975 mds.	
	Charcoal ...	984 „	
Lalitpur „ ...	Bamboos ...	334,497 in number.	

Firewood and charcoal ...	137,795 mds.
Lime ...	6 „
Baskets ...	689 in number
Kiras and kurias ...	32,874 „
Bamboos ...	337,825 „

(f)—Annual timber account.

	Pieces.	Cubic feet.		Pieces.	Cubic feet.
Balance in hand at commencement of year.	33,265	53,907	Removed by purchasers ...	95,724	1,57,557
Received from the forest during year.	89,971	1,64,103	Lost or used by the department.	1,665	1,119
Transferred from one depôt to another.	...	...	Otherwise removed from depôts.	42	286
			Balance in hand at close of year.	25,805	59,048
Total ...	1,23,236	2,18,010	Total ...	1,23,236	2,18,010

(g)—The following statement shows the quantity of timber brought to depôt, the amount paid on account of it, and the quantity sold and amount realized during 1878-79, 1879-80 and 1880-81 :—

Year.	*Brought to depôt.*		*Sold.*		Remarks.
	Cubic feet.	Amount paid.	Cubic feet.	Amount realized.	
		Rs.		Rs.	
1878-79 ...	163,414	1,09,919	264,870	2,53,239	See forms 56, 57, and 58 and summary of revenue and expenditure.
1879-80 ...	198,804	44,840	196,464	1,56,870	See form 56 and summary of revenue and expenditure.
1880-81 ...	163,925	39,887	157,478	1,29,432	See forms 56, 57, and 58 and summary of revenue and expenditure.
Total ...	526,143	1,94,646	618,812	5,39,541	

showing an average cost of timber brought to depôt during the last three years of Rs. 37 per 100 cubic feet and average sales of Rs. 87 per 100 cubic feet.

SECTION 4.—FINANCIAL RESULTS.

15. The following statement shows the results of 1880-81 compared with the results of the two previous years :—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	4,93,405	3,67,601	4,57,606
Expenditure	2,96,679	2,32,234	2,62,437
Surplus ...	1,96,726	1,35,367	1,95,169
Percentage of expenditure to receipts ...	·601	·631	·573

16. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	Receipts.		Charges.	
	Amount.	Budget heads.	Amount.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	1,97,064	I.	1,30,667	$A(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}$ + Direction Rs. 9,510.
II.—Other revenue	2,60,542	II, III.. V.	63,339	$A(II+III+IV+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}$ + Direction Rs. 9,507.
III.—Formation, protection and improvement of forests.	...	...	68,431	$A(\frac{VI}{3}+\frac{VII}{3}+VIII+\frac{IX}{3})+\frac{B}{3}$ + Direction Rs. 9,502.
Total ...	4,57,606	...	2,62,437	

17. The following statement shows the receipts and expenditure in each Division for 1880-81 compared with the corresponding figures of the previous year :—

Division.	Receipts.		Difference.		Expenditure.		Difference.	
	1879-80.	1880-81.	More.	Less.	1879-80.	1880-81.	More.	Less.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	*Nil*	*Nil*	...	...	24,013	28,519	4,506	...
Naini Tál	21,426	35,782	14,356	...	21,005	43,682	22,677	...
Ránikhet	7,165	36,604	29,439	...	17,357	31,940	14,583	...
Kumaun	1,65,574	1,85,371	19,797	...	73,649	72,140	...	1,509
Garhwál	1,11,795	1,26,662	14,867	...	68,255	49,133	...	19,122
Ganges	50,970	61,356	10,386	...	21,460	29,951	8,491	...
Jhánsi	3,648	3,755	107	...	2,910	3,095	185	...
Lalitpur	7,023	8,076	1,053	...	3,585	3,977	392	...
Total ...	3,67,601	4,57,606	90,005	...	2,32,234	2,62,437	50,834	20,631

18. The surplus shown in para. 22 is based on the *cash accounts* of the year, but the following statement shows the *actual profits* of the year :—

Particulars.	Amounts.
	Rs.
Receipts during 1880-81	4,57,606
Expenditure ditto	*2,62,437
Surplus ...	1,95,169
Value of timber and fuel in stock at commencement of the year ...	69,806
Ditto ditto close ditto ...	68,064
Difference against the year to be deducted	1,742
Balance ...	1,93,427
Value of live and dead stock at commencement of the year ...	83,129
Ditto ditto close ditto ...	88,431
Balance to be added ...	5,302
Balance ...	1,98,729
Deduct—	
Amount of revenue realized on account of previous periods ...	...
Balance ...	1,98,729
Add—	
Outstandings of the year, minus bad debts	8,162
Balance ...	2,06,891
Add—	
Amount disbursed on account of previous periods	1,170
Balance ...	2,08,061
Deduct—	
Amount due on transactions of the year, but not yet paid ...	10,925
Balance ...	1,97,136
Deduct—	
Outstandings at commencement of the year	12,956
Balance showing actual profits of the year ...	1,84,170

*Includes Rs. 6,129-5-3, expenditure on account of Bánda forests, for which no revenue has been received.

19. The receipts of the year were Rs. 90,005 more than the receipts of 1879-80, every Division showing an increase. The surplus of the year is Rs. 59,802 more than the surplus of 1879-80, and the actual profits of the year, as shown in para. 18, are Rs. 45,978 more than the actual profits of 1879-80. The average percentage of expenditure to receipts of the Central Circle for the two years 1878-79 and 1879-80 was ·616, and the percentage of the year under report is ·573.

CHAPTER II.

RESERVED, PROTECTED, AND LEASED FORESTS UNDER CHARGE OF OFFICERS OF THE FOREST DEPARTMENT.

20. The Naini Tál Division forests are all "protected."

The Ránikhet Division forests are partly "reserved" and partly "protected."

The Kumaun and Garhwál Division forests are all "reserved."

The Ganges Division forests are partly "reserved" and partly "leased."

A.—NAINI TAL DIVISION.

I.—AREA, BOUNDARIES AND WORKING PLANS.

21. Area.—There has been no change, but the exact area has not yet been received from the Superintendent of Forest Surveys.

22. Demarcation.—Two of the outer boundary pillars and 86 of the pillars which demarcate village lands within the forests were swept away by the September floods. These have not yet been rebuilt, and many of them cannot be rebuilt until their position is determined by survey.

23. Working plan.—The Inspector-General has written a memo. for the guidance of the working plan officer, and the valuation work is nearly finished.

2.—PROTECTION AND IMPROVEMENT.

24. Establishments.—The pay of the Assistant Conservator (Rs 5,400), which has hitherto been charged to "Direction," was charged to the Division this year, and will always be so charged in future. With this exception, there was no change in the permanent establishment.

25. Breaches of Forest rules.—23 cases, in which 43 persons were involved, were tried by the Assistant Conservator in his magisterial capacity, and convictions were obtained in 16 cases involving 30 persons.

26. Roads and Bridges.—A new road, 5 feet broad and 1 mile 10 chains in length, was made from Dhúni khál to Banek khál, which cost Rs. 78-6-0. Another new road, 5 feet broad and 2 miles 67 chains in length, was made from Maulani to Pangoth at a cost of Rs. 130-9-0. All existing roads were kept in repair.

27. Buildings.—The iron-roofed timber shed was finished; total cost, Rs 2,560. The iron-roofed charcoal store was finished; total cost, Rs. 2,344.

A Forester's iron-roofed hut at the timber depôt was built, total cost, Rs. 252.

A wooden guard's hut was built in the Hinnan forest, total cost, Rs. 20.

An iron roof was put on the guard's hut at China at a cost of Rs. 65.

The ranger's hut in the Shor-ká-dánda forest was repaired at a cost of Rs. 40.

Two village houses in the Chitrani forest were bought for Rs. 300. The best one was swept away by a slip in September, but the materials were saved.

28. Reproductive measures.—The following is a detailed account of the plantation work, which cost Rs. 707:—

China forest—

Planting 1,800 deodars from Ránikhet.

" 2,500 walnuts "

" 3,417 horse-chestnuts "

Preparing 2,600 seed patches and sowing with *Quercus lanuginosa.*
„ 4,700 ditto with „ *incana.*

Deopatha forest—

Planting 500 deodars from Ránikhet.

Maulani forest—

Preparing 3,200 seed patches and sowing with *Quercus lanuginosa.*

The above were all weeded and the transplants shaded.

Overhanging branches of jungle trees were cut away from the oaks in the Ayarpatha plantation and the deodars in the Jábar plantation.

The ash and oak seedlings at Bádli were weeded and shaded.

The walnut transplants in the Kahla plantation were weeded.

The deodars at Kiladhunga were weeded.

The oaks in the Ayarpatha plantation and the deodars in Jábar are getting on very well. On the 10th May, 1881, I measured a deodar in Jabár 7 feet 9 inches high, which was 4 feet 9 inches on the 5th June, 1879, and there are several from 6 feet to 7 feet 3 inches.

I have great hopes of the ash at Bádli ; the seed germinated freely. There are hardly any blanks, and the young plants appear to be strong and healthy.

The other plantations generally look promising, the walnuts appearing to thrive remarkably well.

The *Quercus lanuginosa* have germinated freely and the seedlings are flourishing, but porcupines seem very fond of them and have eaten off a great many.

3.—YIELD AND WORKING.

29. The yield of the Division is shown in the following statements :—

(*a*)

Block.	Trees felled. Description.	Number.	Estimated yield in cubic feet.	Remarks.
I.	Mature pine ...	24	712	Sawn into scantlings.
	Ditto ...	325	19,000	Gave 1,703 logs, 865 of which have been converted into scantlings.
	Ditto ...	216	3,640	Converted into scantlings.
	Mature dry and crooked,	417	25,000	Commissariat fuel. In addition to this, about 52,000 cubic feet of fue was prepared from stumps and fallen wood.
	Oak, rhododendron and ayar, large.	241	15,000	
	Ditto small ...	41		
	Miscellaneous ...	195		
	Mature oak ...	360	14,196	
	Dead pine ...	21	900	

(*b*)—*Removed by purchasers.*

Block.	Trees felled. Description.	Number.	Estimated yield in cubic feet.	Remarks.
I.	Miscellaneous poles ...	1,588	1,393	Repairing and building graziers' huts.
	Ditto ...	205	558	Ditto huts in station.
	Mature oak ...	1	80	For use in the station.

(*c*)—*Free to right-holders, &c.*

Block.	Trees felled. Description.	Number.	Estimated yield in cubic feet.	Remarks.
I.	Mature pine ...	16	620	To villagers for building and mills ; 630 refuse pine planks were also given
	Pine poles ...	49	588	
	Mature jaman ...	1	60	
	Sál poles ...	3	9	
	Miscellaneous trees ...	6	30	For village mills.
	Ditto poles ...	546	1,638	„ village temporary huts.
	Small oaks ...	23	230	„ agricultural implements.
	Miscellaneous poles ...	161	400	„ travellers' baggage.

In addition to the above, about 700 maunds of charcoal were prepared from stumps of pine trees and refuse wood.

4.—FINANCIAL RESULTS.

30. The following statement shows the results of the last three years :—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	17,155	21,426	35,782
Expenditure	8,292	21,005	43,682
Deficit	...	...	7,900
Surplus	8,863	421	...
Percentage of expenditure to receipts ...	·483	·980	1·220

31. DETAIL OF REVENUE—

	Rs.	a.	p.
I.*a*.—Sale of 20,119 planks	10,427	5	4
Ditto 3,323 beams			
I.*b*.—Sale of 9,360 maunds hard wood charcoal ...	9,345	2	0
Ditto 606 do. pine ditto ...	606	2	0
Commissariat fuel 13,411 maunds hard wood ...	12,781	1	1
Ditto 20,224 do. pine wood			
Total under I.*b*. ...	22,732	5	1
I.*c*.—Sale of 5½ maunds of lime	2	12	0
II.*a*.—Royalty on 39 pine trees	247	0	0
Ditto miscellaneous wood for huts ...	141	0	4
Total under II.*a*. ...	388	0	4
II.*b*.—3,453 wood tickets	1,726	8	0
30 cubic feet of fuel	1	14	0
Contract for walking-sticks	10	0	0
Total under II.*b*. ...	1,738	6	0
II.*c*.—Royalty on 358 loads of ringals	44	12	0
II.*d*.—Grazing dues on 420 buffaloes	105	0	0
Ditto 1 horse	0	2	0
Ditto 449 cows	28	1	0
Ditto 87 goats	2	11	6
Total under II.*d*. ...	135	14	6
II.*e*.—Royalty on chir tar (300 gharas)	37	8	0
Ditto 1,500 cubic feet limestone	93	12	0
Total under II.*e*. ...	131	4	0
III.—Sale of 7 maunds confiscated wood	1	12	0
V.*a*.—Fines	177	8	0
V.*c*.—1 rood 25 poles cultivation	2	0	6
Total revenue ...	35,781	15	9

32. Compared with 1879-80 there is an increase under I. of 18,908 Rs.
Under II. a decrease of 4,089
„ III. and V a decrease of 462

The increase under I. is due to timber and charcoal having been supplied from depôts departmentally. The decrease under II. is entirely due to the timber and charcoal having been supplied by Government agency, instead of being removed from the forest by consumers or purchasers. Under III. and V. the receipts were abnormally increased in 1879-80 by a refund of Rs. 439 under V. *b*.

		Rs.
33. The value of stock at the commencement of the year was	...	12,770
And at the close of the year	...	24,831
The outstandings at the close of the year were—		
Due on account of contractors	...	586
Ditto disbursers	...	...

34. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	33,162	I.	33,777	A $\left(\mathrm{I}+\mathrm{V}+\frac{1}{2}\mathrm{VI}+\frac{\mathrm{VII}}{3}+\frac{\mathrm{IX}}{3}\right)+\frac{\mathrm{B}}{3}+$ Direction Division Rs. 667.
II.—Other revenue ...	2,620	II., III., and V.	5,108	A $\left(\mathrm{II}+\mathrm{III}+\mathrm{IV}+\frac{\mathrm{VII}}{3}+\frac{\mathrm{IX}}{3}\right)+\frac{\mathrm{B}}{3}+$ Direction Division Rs. 667.
III.—Formation, protection, and improvement of forests.	...	...	6,797	A $\left(\frac{\mathrm{VI}}{2}+\frac{\mathrm{VII}}{3}+\mathrm{VIII}+\frac{\mathrm{IX}}{3}\right)+\frac{\mathrm{B}}{3}+$ Direction Division Rs. 666.
Total ...	35,782	...	45,682	

35. The following statement shows the actual profits of the year :—

Particulars.		Amount.
		Rs.
Receipts during 1880-81	... ...	35,782
Expenditure Ditto	... ...	43,682
	Deficit ...	**7,900**
Value of timber at commencement of the year	...	11,240
Ditto close ditto	...	9,043
Difference against the year to be deducted	...	2,197
	Deficit ...	**10,097**
Value of live and dead stock at commencement of the year	...	1,530
Ditto close ditto	...	15,788
Difference in favour of the year to be added	...	14,258
	Surplus ...	**4,161**
Deduct amount of revenue realized on account of previous periods,		*Nil*
Add outstandings of the year	... ...	586
	Surplus ...	**4,747**
Add amount disbursed on account of previous periods	...	1,170
	Surplus ...	**5,917**
Deduct amount due on account of former years, but not yet paid	...	65
	Surplus ...	**5,852**
Deduct amount due on transactions of the year, but not yet paid	...	5,117
	Surplus ...	**735**
Add expenditure on the Bánda forests	... ...	139
	Net profit ...	**874**

B.—RANIKHET DIVISION.

1.—AREA, BOUNDARIES AND WORKING PLANS.

36. AREA.—No change has taken place in the area of either the reserved or protected forests of this Division.

37. DEMARCATION.—The village lands within the protected forests are not yet all demarcated, and consequently the survey of the forests could not be completed. The Deputy Conservator reports as follows:—"It was found extremely difficult to identify some of the plots which had been long thrown out of cultivation. They are, however, nearly all finished. All settled ones are demarcated with pillars, and the few remaining ones are now being done under the Assistant Commissioner's orders, and will be surveyed during the summer."

38. The report of the valuation of the reserved forest, which was mentioned in paragraph 9 of last year's annual report, has been reviewed by the Inspector-General and forwarded to Government.

2.—PROTECTION AND IMPROVEMENT.

39. ESTABLISHMENTS.—There has not been any change in the establishments.

40. BREACHES OF FOREST RULES.—There were 37 cases, involving 97 persons Ten of these cases were tried by the Magistrate and 24 settled by the Deputy Conservator and 3 are still pending. Convictions were obtained in 33 cases, including 82 persons.

41. ROADS AND FENCES.—All existing roads were repaired, except the one along the Kaligadh stream. It was so much damaged by the heavy rains in September that there were not sufficient funds available for its repair.

The fences round the reserved forests and the two plots of closed protected forests were kept in repair. An attempt was made to create a live fence round the reserved forest by sowings of ghingáru (*Cratægus Pyracantha*). The seed germinated freely, but the seedlings nearly all died. Wild-pear seed has now been tried, and it promises to do well.

42. REPRODUCTIVE MEASURES.—Mr. Craw's report on nursery and plantation work here follows in full:—

"The several kinds of seeds and quantities of each sown during the year are as follows:—

Name.	℔.	Source.
Apricot	246	Orchard.
Plum	16	Ditto.
Apple	2	Ditto.
Wild pear	254	Forests.
Wild rose	142	Ditto.
Chír	50	Ditto.
Cypress	19	Forest Department, Naini Tál.
Pinus excelsa	41	Ditto Chakráta.
Pithecolobium Saman	10	Superintendent, Botanical Gardens, Calcutta.

"3. The apricot, plum, and apple seeds are vegetating very freely, and the seed of *Pinus excelsa* is also coming up well.

"Five ℔ of *Pithecolobium saman* were sown in flower pots early last September and germinated very well; but the young plants were all killed by cold, notwithstanding the pots were placed under cover open to the south. The other half of the seed was sown in March and is now coming up. With a year's growth upon them the young plants will be better able to withstand the cold of next winter.

"The cypress seed has not yet vegetated. Of the wild pear and wild rose seeds, 1 maund and 26 seers of the former and 37 seers of the latter were sown to form a hedge round the reserved forests. The pear seed has vegetated remarkably well; but the wild rose, which is late in vegetating, has not yet come up. The seed being fresh, I think there is no doubt it, too, will come up in time.

" 4. The remainder of the pear and rose seed has been sown in the nursery, to afterwards transplant and complete the fence along the jail boundary when the quarrying there is finished.

" 5. The chir seed, sown just before the rains set in on the bare hillsides at Dalmoti and Dhon, came up well all over, with the exception of some spots infested by rats, which must, I think, have eaten the exposed seeds.

" 6. The young acacias at Dalmoti, though carefully covered with grass to protect them from the hot autumn sun and frost in winter, have not done satisfactorily, and I think it will be advisable to fill up all vacancies with *Pinus excelsa* and walnut plants to making fresh sowings of the acacia.

" 7. The planting operations in the forests consisted in filling up vacancies at Jainoli, Kunyara, and Ghingaru khal, where 6,854 deodar and 2,203 oaks were put out. These have mostly done well. The established trees at Jainoli and Kunyaria have done extremely well, yearly making good progress; but at Ghingaru khal, owing to the nature of the soil, the plants have not done so well. No doubt, when the ground is better covered with grass and brushwood, the plants will do better.

" 8. The following is a list of forest and fruit trees distributed during the year :—

1st—Fruit trees.

	Deodar.	Walnut.	Horse chestnut.	Miscellaneous.	Total.
Cantonment Magistrate, Ránikhet ...	300	3,540	3,881	...	7,721
Executive Engineer, Ránikhet ...	250	50	150	...	450
Forest Department, Naini Tál ...	1,600	4,400	1,500	...	7,500
Householders	470	240	167	1,615	2,492
Total ...	2,620	8,230	5,698	1,615	18,163

2nd—Fruit trees.

Householders and villagers ...	Apple ... 801	Quince ... 109			
	Pear ... 709	Mulberry ... 61			
	Plum ... 541	Fig ... 124			
	Apricot ... 771	Loquat ... 86			
	Cherry ... 435	Currant ... 88			
	Peach ... 462	Sweet chestnut 10			
				—	4,197
		Total ...			22,360

" 9. The revenue from sale of fruit is as follows :—

Description of fruit.	Quantity.	Total.	Rate per seer.	Total.
	Mds. s. c.	Mds. s. c.	Rs. a. p.	Rs. a. p.
Apricots	10 1 2		0 12 0	300 13 0
Ditto	0 7 0		0 6 0	2 10 0
Ditto	3 19 6	13 27 8	0 4 0	34 13 6
Cherries	0 1 0	0 1 0	1 0 0	1 0 0
Plums	1 37 0		0 8 0	38 8 0
Do.	0 12 0	2 9 0	0 4 0	3 0 0
Apple, dessert	14 34 13		0 12 0	446 2 0
Do. cooking	12 4 4		0 8 0	242 2 0
Do. do.	5 17 8		0 6 0	81 9 0
Do. small	0 20 8	32 37 1	0 4 0	5 2 0
			Total ...	1,155 11 6

" 10. I am sorry to have to inform you that the fruit crop will be a short one this year. The apricot crop will scarcely equal half that of last year, and apples and plums also will be short. There is, however, a fair sprinkling of cherries and pears, of which there were none of any account the first season.

"11. The stock of forest and fruit trees in the nursery is as follows:—

	1st.—Forest trees.	
Walnut	64,636	
Deodar	96,500	
Horse chestnut	22,126	
Oak	6,626	
Pinus excelsa...	11,330	
Ash	7,437	
Cypress	1,104	
Willow	3,946	
Gums	3,206	
Miscellaneous	3,350	
		220,261
	2nd.—Fruit trees.	
Apple, grafted	2,210	
Do., stock	6,280	
Pear, grafted	9,613	
Do., stock	14,941	
Apricot, budded	498	
Do., stock	14,662	
Plum, budded	1,406	
Do., stock	3,237	
Cherry, budded	220	
Do., stock	7,598	
Peach, budded	4,082	
Do., stock	13,012	
Loquat, inarched	86	
Do., stock	57	
Quince	287	
Fig	331	
Currant	257	
Mulberry	310	
		79,087
Total ...		299,348

"12. Of the six dozen of fruit trees received last spring from Messrs. Veitch and Sons the following are alive, *viz.*:—

Apples	19
Figs	10
Plums	8
Peaches	4
Nectarines	1
Total ...	42

"Eleven nectarines, eight peaches, four plums, two figs and five apples failed to grow. I have already propagated from the surviving peaches and will now propagate as largely as possible from the other surviving kinds.

"13. The unusually heavy rain last September, so destructive in other parts, broke down many of the terrace walls in the nursery. These have been substantially repaired, and new terraces in other parts made to prevent the surface soil from being washed away."

43. I am much grieved to hear that the acacias at Dalmoti have not done well. Every care was taken of them, and we have tried many different systems of growing them. A memo. of all the different systems which we have tried will now be sent to the Conservator of Madras, whose advice will be asked.

3.—YIELD AND WORKING.

44. The yield of the Division is shown in the following statements :—

(a).

Name of forest.	Trees felled. Description.	Number.	Estimated yield of timber or fuel in cubic feet.	Remarks.
Shauni ...	Mature pine ...	300	35,100	Sold to Public Works Department, Military Works.
	Small pine ...	8	24	
Kathallekh ...	Mature pine ...	114	13,338	Sold to private purchasers.
Ganiadeoli ...	Ditto ...	27	3,159	
Padholi ...	Ditto ...	3	351	
	Ditto ...	4	468	
	Small pine ...	30	90	
Airadeo ...	Mature pine ...	7	819	Sold to Sadr Amin, Almora.
	Small pine ...	47	141	
Dwarson ...	Mature pine ...	3	243	Supplied free of charge to the Executive Engineer, Kumaun Provincial Works, for repairs of bridges.
Bhatronj ...	Other kinds mature,	13	312	
	Do. immature ...	9	63	
Ganiadeoli ...	Small pine ...	81	1,458	Used by repairs of fences, &c.
	Ditto ...	5	90	
Ránikhet reserved forest.	Mature pine ...	164	14,544	Felled for fuel for the Commissariat Department. The balance of the fuel prepared for the Commissariat Department was obtained from fallen wood and stumps.
	Small pine ...	58	1,000	
	Mature oak ...	204	8,472	
	Small oak ...	30	150	
	Other kinds ...	211	3,438	
Dwarson ...	Mature pine ...	12	796	
	Small pine ...	69	659	
	Mature oak ...	49	1,575	
	Small oak ...	8	40	
	Other kinds ...	19	255	
Chilianao ...	Mature pine ...	17	1,436	
	Small pine ...	5	90	
Karchuli ...	Mature pine ...	6	472	
Chaubattia ...	Ditto ...	14	1,808	
	Small pine ...	2	36	
Ganiadeoli ...	Mature pine ...	21	2,170	
	Small pine ...	12	216	
Padholi ...	Mature pine ...	13	1,220	
	Small pine ...	1	18	
	Total ...	1,566	94,051	

(b)—*Trees given free to villagers.*

Name of forest.	Trees felled. Description.	Number.	Estimated yield of timber in cubic feet.	Remarks.
Shauni	Mature pine	132	7,920	
	Small pine	1,022	6,132	
	Oak, &c.	570	2,280	
Siun	Mature pine	16	960	
	Small pine	185	1,110	
	Oak	105	420	
Bellekh	Mature pine	64	3,840	
	Small pine	566	3,396	
	Oak	35	140	
Bhatronj	Mature pine	4	240	
	Small pine	11	66	
	Oak, &c.	188	752	
Kathallek	Mature pine	37	2,220	
	Small pine	434	2,604	
Ganiadeoli	Mature pine	24	1,440	
	Small pine	167	1,002	
Karchuli	Mature pine	4	240	
	Small pine	47	282	
Chaubattia	Mature pine	43	2,580	
	Small pine	317	1,902	
Padholi	Mature pine	21	1,260	
	Small pine	259	1,554	
Dwarson	Mature pine	37	2,220	
	Small pine	264	1,584	
	Oak	30	120	
Airadeo	Mature pine	159	9,540	
	Small pine	1,701	10,206	
	Oak, &c.	87	348	
Siahi Devi	Mature pine	43	2,580	
	Small pine	169	1,014	
	Oak	55	220	
	Total ...	6,796	70,172	
	GRAND TOTAL OF TREES CUT ...	8,362	1,64,223	

The number of trees given to villagers was slightly in excess of the number given in 1879-80, owing to the damage done to houses by the unusually heavy September rain.

45. One hundred and seventy-nine maunds of charcoal were supplied to the Sheuni branch of the Naini Tál Brewery Company, and 51 maunds were made by the Department Public Works from wood from which tar had been extracted.

4.—FINANCIAL RESULTS.

46. The following statement shows the results of the last three years :—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	53,364	7,165	36,604
Expenditure	35,803	17,357	31,940
Deficit	...	10,192	...
Surplus	17,561	...	4,664
Percentage of expenditure to receipts... ...	·670	2,422	·872

47. DETAIL OF REVENUE—

I.*b*.—Fuel supplied to the Commissariat :—

	Rs.	a.	p.
91,235 mds. 28 lb. at Rs. 34 per hundred maunds of 82 lb. ...	31,019	15	10
II.*a*.—308 pine trees sold to Department Public Works, Military Works	2,602	0	0
178 ditto private purchasers	1,333	8	0
Royalty on 265 charpoys, at 1 anna each	16	9	0
Total under II.*a*....	3,952	1	0
II.*b*.– Royalty on 179 mds. 18 srs. charcoal to Brewery Company at 4 annas	44	13	9
Ditto on 51 mds. charcoal to Department Public Works, Military Works, at 2 annas	6	6	0
Huts and wood for 2,585 squatters	319	3	0
Total under II.*b*	370	6	9
II.*d*.—Sale of fodder grass	500	0	0
II.*e*.—Royalty on 70 quarries at 8 annas	35	0	0
Sale of orchard fruits	499	13	6
Royalty on 416 gharas chír tar at 2 annas each ...	52	0	0
Ditto 21,400 cubic feet of metalling stone at 1 anna per 100 cubic feet	13	6	0
Total under II.*e*. ...	600	3	6
V.*a*.—Fines	84	12	0
V.*c*.— Other sources	77	0	8
Total revenue ..	36,604	7	9

48. Compared with 1879-80 there is—

	Rs.
An increase under I. of	28,006
Ditto II. of	1,39[illegible]
Ditto V. of	40

The large increase under I. is due partly to the Commissariat having taken double the amount of firewood they took in 1879-80, but mainly to the new system of direct delivery.

As regards II., there is an increase of Rs. 3,461 under II.*a*. owing to a larger number of pine trees having been sold to the Department Public Works and to private purchasers for building purposes.

Under II.*b*. a decrease of Rs. 1,944; owing to no firewood and less charcoal having been supplied to brewery companies, &c.

Under II.*d*. a decrease of Rs. 150, owing to the grass in the reserved forest having been sold for that much less.

And under II.*e*. an increase of Rs. 27.

49. The outstandings at the close of the year were :—

	Rs.
On account of disbursers	650
Ditto revenue	724

viz., Rs. 655 by Mr. Goslett for sale of fruit and Rs. 69 by the Almora Sadr Amin for trees.

The liabilities amounted to Rs. 1,229, which sum was due to contractors for preparation and carriage of firewood.

50. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	31,020	I.	21,357	$A\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Division Rs. 668.
II.—Other revenue ...	5,584	II. and V.	4,898	$A\left(II+III+IV+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Division Rs. 666.
III.—Formation, protection, and improvement of forests.	...	...	7,685	$A\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Division Rs. 666.
Total ...	36,604	...	33,940	

51. The following statement shows the actual profits of the year :—

Particulars.	Amount.
	Rs.
Receipts during 1880-81	36,604
Expenditure ditto	31,940
Surplus ...	4,664
Value of fuel in stock at commencement of the year ...	4,532
Ditto ditto close ditto ...	372
Difference against the year to be deducted	4,160
Balance ...	504
Value of live and dead stock at commencement of the year ...	6,327
Ditto ditto close ditto ...	6,415
Balance to be added ...	88
Balance ...	592
Deduct amount of revenue realized on account of previous periods,	...
Add outstandings of the year, minus bad debts	*1,306
Balance ...	1,898
Add amount disbursed on account of previous periods ...	...
Deduct amount due on transactions of the year, but not yet paid...	† 1,229
Balance ...	660
Deduct outstandings at commencement of the year ...	...
Balance showing actual profits of the year ...	669

* Rs. 650 amount outstanding against disbursers.
„ 656 outstanding on account of revenue.
1,306

† Due to contractor for preparation and carriage of Commissariat firewood.

C.—KUMAUN DIVISION.

1.—AREA, BOUNDARIES AND WORKING PLANS.

52. AREA.—The area is the same as last year, but arrangements have been made with the Commissioner for adding about 3 square miles of sál forest to the small block (320 acres) on the Sárda.

53. DEMARCATION.—The following statement shows what has been done during the year, and also what remains to be done :—

Name of range.	A. Outer boundaries of the forests.		B. Boundaries of village lands within the forests.		C. Boundaries of the portions of the reserved forests which are open to the exercise of recorded rights.		Remarks.
	Work done in 1880-81.	Remaining.	Work done in 1880-81.	Remaining.	Work done in 1880-81.	Remaining.	
Chilkia ...	*Nil* ...	*Nil* ...	5 boundary pillars.	The work is going on, and very little remains to be done.	50 feet line 14 chains; 2 feet path 14 miles and 37 chains.	*Nil.*	
West Kotah...	*Nil* ...	*Nil* ...	18 boundary pillars.	The work is going on and very little remains to be done.	50 feet line 7 miles and 6 chains; 2 feet path 1 mile and 6 chains.	*Nil* ...	The boundaries of the villages of Patkote, Reca, Simli, Bhalon, Tehra, and Chukám were settled this season.
Chakháta ...	35 boundary pillars.	4 pillars have to be built on the Hurai forest.	26 boundary pillars.	*Nil* ...	9 boundary pillars.	*Nil.*	
Chaubhainsi...	11 boundary pillars	*Nil* ...	84 boundary pillars.	*Nil* ...	21 boundary pillars.	*Nil* except a little line-cutting.	
Talla Des ...	21 boundary pillars.	Part remains to be demarcated.	*Nil* ...	Nearly all the village boundaries have to be demarcated.	50 feet line 1 mile and 30 chains; 36 pillars.	3 pillars to be built. A few pillars also required for the extension of block XI.	

The Deputy Conservator remarks :—"I have given the details in this statement as accurately as possible at the present time, but in the matter of work remaining to be done possibly more may be required here and there at some future time."

54. The demarcation work has progressed very satisfactorily, as may be seen from the above statement. The only boundaries which are not yet settled are the boundaries of some 29 village lands in the pattis of Talla Des and Talla Palbilon in Eastern Kumaon, and a small portion of the outer boundary in connection with these lands. This would have been finished during the past winter had the Commissioner been able to spare an officer for the work. All the pillars are built of stone with lime mortar, and they are numbered consecutively.

2.—PROTECTION AND IMPROVEMENT.

55. ESTABLISHMENTS.—There has not been any change.

56. BREACHES OF FOREST RULES.—There were 221 cases, in which 491 persons were involved. Convictions were obtained in 198 cases, including 397 persons.

57. ROADS AND BRIDGES.—The heavy rains of September caused great damage to the roads, especially to the one in the Kosi valley between Dikali and Mohan, and to part of the Rámganga valley road between Chakalúa khal and Barsoti.

The line of the former had to be entirely changed and a new road made 7 miles in length and 18 feet broad. It has been completed with the exception of the Chinal Sote bridge. The masonry work for this is finished and the timber collected near the site. A 4-feet bridle-path has been opened out along the Rámganga valley road; for want of funds more could not be done to it. All the other roads (291 miles of roads and 207 miles of paths) were put into proper repair.

The bridle-path, 4 feet broad, which runs along the outer range of hills between the Nindhore and Kalonia valleys and the plains, was carried on as far as the Airideo temple, a distance of three miles. A new road was commenced to connect the khám tahsíl chaukis of Sudlimat and Ransáli, and it will be necessary to continue this system of roads along the line of lower chaukis from the Chorgalia-Sitarganj road (east of Hurai) to the Barmdeo-Pilibhít road at Chandani, and also from the Borkhata chauki (below Káládhungi) to the Patrámpur chauki, which is on the western boundary of the Division, six and-a-half miles were made during the year, 3¾ of 12 feet breadth and 2¾ of 36 feet.

58. BUILDINGS.—All existing buildings were kept in repair and some of the small temporary inspection huts rebuilt.

59. REPRODUCTIVE MEASURES.—Last year there was hardly any sál seed. Some tún was sown at Dhungalgarh, and the seedlings appear to be doing well.

The sál seed sown at Chúpra, in west Kotah, in 1879, produced a good crop of seedlings, a large number of which are alive and growing well. The khair plantations in the Kosi valley were almost entirely washed away by the September floods.

60. Regarding artificial protection to the seedlings the Deputy Conservator writes as follows :—

"At the different plantations protection has been given to the seedlings this season by means of grass coverings, and in consequence a much smaller proportion have died. Mr. Brandis, when he inspected some of the plantations, appeared to think that the seedlings were too much covered up, and that they required more light. So, as an experiment, I had the coverings removed from alternate plants at several different localities, and the Forest Ranger reports that in all cases the covered ones are doing much better than the uncovered, and that a large proportion of the uncovered ones have died during the hot weather."

61. In February, 1880, a bundle of mulberry (*Morus multicaulis*) cuttings were received from the Saháranpur Gardens, together with a few plants of four kinds of *Eucalyptus*, 20 plants of *Swietenia Mahogani*, 11 of *Sterculia tricosiphon*, 20 of *Rhus Thunbergi*, and 9 of *Catalpa bignonioides*. The mulberry cuttings struck well, and a number of them have been planted out since at Ramnagar, Chupra, Laiti, and Chorgalia, and are growing capitally. A few of the *Eucalyptus* are growing fairly well. Ten of the *Swietania* trees, ten of the *Sterculia*, seven of the *Catalpa*, and 15 of the *Rhus* are alive in the Ramnagar Garden. The three former kinds are growing very rapidly; the *Rhus* look healthy, but grow more slowly than the others. The plantation work cost Rs. 582.

62. CUTTING OF CREEPERS AND WORTHLESS TREES.—This work was continued in the Mowa-ár sál forest over an area of about 800 acres. Creepers were also cut over an area of about 3,370 acres in the Garibulchand sál forest.

3.—YIELD AND WORKING.

63. The yield of the Division is shown in the following statements :—

(*a*)

Block.	Trees felled.		Yield of timber in cubic feet.	Remarks.
	Description.	Number.		
I.	Mature sál ...	2,046	28,675	Converted into scantlings.
	Jamau ...	52	699	Ditto.
	Pine ...	21	624	Ditto.
	Mahua ...	678	3,390	Worthless trees felled in sál forest and left on the ground.
III.	Mature sál ...	723	21,817	Converted into logs and scantlings.
	Inferior kinds ...	4	30	Ditto scantlings.
IV.	Mature sál ..	200	8,000	Nawab of Rámpur's right.
	Sál poles ...	177	531	For divisional work, mostly poles.
VI.	Gosam ...	92	230	Cut by merchants.

(*b*)—*Dry timber removed by purchasers.*

	Cubic feet.
Sál	92,268
Sisham, tún, &c.	33,962
Inferior kinds	32,653
Total removed by purchasers ...	158,883

64. For the departmental timber operations 2,046 sál trees, mostly crooked, hollow, or otherwise inferior, were felled in the Mohán forest between Amtanula and Durgadeh and converted into 28,675 cubic feet of scantlings, averaging a little over 14 cubic feet per tree ; and 723 sál trees were felled in the Kuthalia and Bhalon forests and converted into 21,817 cubic feet of logs and scantlings, averaging a little over 30 cubic feet per tree.

65. The export of timber through the khám tahsíl has been very brisk this year, as will be seen by the following statement ; all chaukis showing an increase as compared with 1879-80, except the three in Eastern Kumaon, *viz.*, Kilpura, Chandani and Barmdeo, the falling off here being due to clearances for cultivation having come to an end :—

	1879-80.		1880-81.	
	Cubic feet.	Amount realized.	Cubic feet.	Amount realized.
		Rs.		Rs.
Timber removed by purchasers ...	112,040	36,953	158,883	64,992

4.—FINANCIAL RESULTS.

66. The following statement shows the results of the last three years—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	1,70,856	1,65,574	1,85,371
Expenditure	70,862	73,649	72,140
Surplus ...	99,994	91,925	1,13,231
Percentage of expenditure to receipts	·414	·444	·389

67. DETAIL OF REVENUE—

	Rs.	a.	p.
I.*a*.—Sál logs	14,966	5	6
Ditto kolus	450	3	6
Ditto sleepers	282	10	1
Ditto karis	53,215	13	3
Ditto jorahs	3,892	0	1
Ditto planks	223	9	5
Sein karis	1,189	9	8
Haldu karis	1	0	0
Dhaura and bákli karis	33	0	4
Jaman karis	100	10	6
Chír karis	944	6	0
Total under I.*a*. ...	75,299	4	4
II.*a*.—Sál removed by purchasers ...	46,133	13	0
Sisham ditto ...	1,959	15	6
Sandan ditto ...	283	15	1
Tún ditto ...	272	8	8
Jáman ditto ...	689	2	1
Sein ditto ...	620	2	1
Haldu ditto ...	4,813	2	10
Khair ditto ...	10,219	8	5
Total under II. *a*....	64,992	3	
II.*b*.—Firewood and charcoal removed by purchasers	5,786	6	4
II*c*.—Bamboos ditto ditto ...	11,290	8	10
II*d*.—Grazing and fodder grass	10,266	6	0
II*a*.—Other minor produce	16,632	6	1
III.—Confiscated, drift and waif wood ...	298	6	3
V*a*.—Fines and ferfeitures	558	6	11
V*c*.—Other sources	247	4	5
Total revenue ...	1,85,371	4	10

	Rs.
68. Compared with 1879-80, there is a decrease under I. of	16,190
Under II. an increase of	37,047
„ III. and V. a decrease of	1,060

The decrease under I. is due to a less amount of timber having been sold from depôt, but the prices obtained were very good.

All the sub-heads of II. show an increase, as follows :—

	Rs.
II*a*.—Timber removed by purchasers	28,039
II*b*.—Firewood and charcoal ditto	2,297
II*c*.—Bamboos ditto	4,899
II*d*.—Grazing and fodder grass	390
III*c*.—Other minor produce	1,419
69. The value of depôt stock at the commencement of the year was	26,660
And at the close of the year	40,882

	Rs.
The outstandings at the close of the year were—	
On account of contractors	2,000
Ditto disbursers	1,418

70. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	75,299	I	34,161	A $\left(\text{I} + \text{V} + \frac{\text{VI}}{2} + \frac{\text{VII}}{3} + \frac{\text{IX}}{3}\right)$ $+ \frac{\text{B}}{3}$ + Direction Rs. 4,107.
II.—Other revenue ...	1,10,072	II, III., & V.	24,959	A $\left(\text{II} + \text{III} + \text{IV} + \frac{\text{VII}}{3} + \frac{\text{IX}}{3}\right)$ $+ \frac{\text{B}}{3}$ + Direction Rs. 4,106.
III.—Formation, protection and improvement of forests.	...	...	25,339	A $\left(\frac{\text{VI}}{2} + \frac{\text{VII}}{3} + \text{VIII} + \frac{\text{IX}}{3}\right)$ $+ \frac{\text{B}}{3}$ + Direction Rs. 4,106.
Total ...	1,85,371	...	84,459	

71. The following statement shows the actual profits of the year :—

Particulars.	Amount.
	Rs.
Receipts during 1880-81	1,85,371
Expenditure ditto	72,140
Surplus ...	**1,13,231**
Value of timber in stock at the commencement of the year ...	26,750
Ditto ditto close ditto ...	40,882
Difference in favor of the year to be added	14,132
	1,27,363
Value of live and dead stock at the commencement of the year ...	25,847
Ditto ditto close ditto ...	25,565
Balance to be deducted ...	**282**
	1,27,081
Deduct amount of revenue realized on account of previous periods ...	*Nil.*
	1,27,081
Add outstandings of the year, minus bad debts	3,418
	1,30,499
Add amount disbursed on account of previous periods	*nil.*
	1,30,499
Deduct amount due on transactions of the year, but not yet paid ...	*Nil.*
	1,30,499
Deduct outstandings at commencement of the year	800
Balance showing actual profits of the year ...	**1,29,699**

D.—GARHWAL DIVISION.

1.—AREA, BOUNDARIES, AND WORKING PLANS.

72. AREA.—There has been no change in the area of this Division.

73. DEMARCATION.—The outer boundaries of the forests are all demarcated; the pillars at the main points, which were fixed by the District Officer, are all of stone and lime; but the intermediate pillars, which are at present kucha, have yet to be built. When this is done, the whole of the pillars will be numbered and surveyed.

74. The same remarks apply to the boundaries of village lands within the forests. With the exception of the three plots, *viz.*, Kotirao, Jhirna and Dkáron, they have all been demarcated as above.

75. The boundaries of the portions of the forests which are open to the exercise of recorded rights are demarcated by stone and lime pillars, and 6-feet paths are being cut from pillar to pillar. These pillars have also to be numbered and surveyed.

76. Mr. Dansey's working plan of the north Pátli Dún block was revised by the Inspector-General, and orders are expected shortly.

2.—PROTECTION AND IMPROVEMENT.

77. ESTABLISHMENTS.—The establishments remain unaltered.

78. BREACHES OF FOREST RULES.—There were 59 prosecutions, in which 111 persons were involved. Convictions were obtained in 43 cases, involving 73 persons.

79. ROADS AND BRIDGES.—The roads in this Division have never before been so much damaged as they were by the heavy rain and floods of last September. In some places the Rámganga river rose 100 feet above its ordinary flood level; the sisham groves and islands in the Pátli Dún were nearly all washed away and the road from Kálagarh to Bogsár was utterly destroyed.

The same may be said of the Kotri, Palani and Mundhál valley roads, and most of the other roads suffered considerably from the tremendous downpour.

All of the four abovementioned roads, except the Mundhál one, were re-made and much improved and all other roads were repaired. This road-making occupied a great deal of the Assistant Conservator's time, but I am glad to be able to report that the work was well done.

3.—YIELD AND WORKING.

80. The yield of the Division is shown in the following statements:—

(*a*)

Block.	*Trees felled.*		Yield of timber in cubic feet.	REMARKS.
	Description.	Number.		
I. ...	Mature sál ...	161	4,202	110 of these trees=2,921 cubic feet of timber, were sawn up by a merchant and exported under II.*a*. The remaining 46 trees were converted into logs by departmental agency, but were not removed from the forest. Five trees were too hollow for use.
II. ...	Matnre sein ...	1,608	34,478	Sawn (on indent) into scantlings by departmental agency.

(*b*)—*Removed by purchasers.*

	Cubic feet.
Sál	71,331
Other kinds	44,697
Total removed by purchasers ...	116,028

81. The 115 sál trees were given to a merchant for the purpose of ascertaining whether it is as profitable for Government to sell the trees standing as to convert them by departmental agency and bring them to depôt.

The 161 sál trees felled during the year were all felled in the same forest. Forty-six of these trees were converted into logs and yielded 1,281 cubic feet of timber, or nearly 28 cubic feet per tree. Of the remaining 115 trees, 110 were sawn up and exported by the merchant and yielded 2,921 cubic feet of *sawn* timber, or over 26½ cubic feet per tree. This shows that there was no waste of wood. The remaining five trees were hollow and useless. Had the same scantlings and the same amount been sawn up by departmental agency, they would, after deducting all expenses for sawing, carriage, &c., have given a clear profit of Rs. 1,962 according to the depôt sale rates of 1879-80. The merchant was charged the ordinary khám tahsíl rates for his 2,921 cubic feet of timber, which amounted to Rs. 1,782.

As this was the commencement of a new system which we hope to extend, not only for sál but for sein and other kinds of less valuable trees also, it was advisable to allow the merchant easy terms. The khám tahsíl rates (which he paid) are for fallen and dead timber, which has to be searched for in out-of-the-way places, so we shall certainly be able to raise the rates in future for timber sawn from green trees in forests rendered accessible by a system of cart-roads. Further trials of this system will be made during next working season, and they shall be duly reported on.

4.—FINANCIAL RESULTS.

82. The following statement shows the results of the year :—

	1880-81.
	Rs.
Receipts	1,26,662
Expenditure	49,133
Surplus	77,529
Percentage of expenditure to receipts	·387

83. DETAIL OF REVENUE—

	Rs.	a.	p.
I.*a*.—Sál karis	29,839	7	11
Do. sleepers	4	8	0
Do. beams	157	3	0
Sein karis	9,702	14	10
Total under I.*a*. ...	39,704	1	9
II.*a*.—Timber removed by purchasers—			
Sál	33,588	7	9
Sisham	268	0	7
Sandan	2,506	8	0
Tún	219	9	9
Khair	6,531	2	8
Sein	778	2	6
Inferior kinds	878	2	4
Total under II.*a*. ...	44,770	1	7
II.*b*.—Firewood removed by purchasers	5,509	5	3
II.*c*.—Bamboos ditto	25,512	4	10
II.*d*.—Grazing and fodder grass	2,394	8	5
II.*e*.—Other minor produce	7,812	10	3
III.—Confiscated, drift and waif wood	621	15	0
V.*a*.—Fines and forfeitures	130	15	8
V.*b*.—Refunds	20	13	6
V.*c*.—Other sources	185	2	3
Total revenue ...	1,26,661	14	6

	Rs.
84. The value of depôt stock at the commencement of the year was	27,165
And at the close of the year	5,772
The outstandings at the close of the year were—	
Due on account of contractors	195
Ditto disbursers	1,865
The liabilities were—	
Due to Meerut timber merchants	5,805

This sum was paid in advance for sein timber, which, at the close of the year, had not been supplied.

85. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	39,704	I.	19,976	$A\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 2,667.
II.—Other revenue ...	86,958	II., III., and V.	17,693	$A\left(II+III+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 2,667.
III.—Formation, protection, and improvement of forests.	...	...	19,464	$A\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 2,666.
Total ...	1,26,662	...	57,133	

86. The following statement shows the actual profits of the year :—

Particulars.	Amount.
	Rs.
Receipts during 1880-81	1,26,662
Expenditure ditto	49,133
Surplus ...	77,529
Value of timber in stock at commencement of the year	27,165
Ditto ditto close ditto	5,772
Difference against the year to be deducted	21,393
Balance ...	56,136
Value of live and dead stock at commencement of the year ...	12,910
Ditto ditto close ditto	13,245
Balance to be added ...	335
Balance ...	56,471
Deduct amount of revenue realized on account of previous periods ...	...
Add outstandings of the year, minus bad debts	2,060
Balance ...	58,531
Add amount disbursed on account of previous periods	...
Deduct amount due on transactions of the year, but not yet paid ...	5,805
Balance ...	52,726
Deduct outstandings at the commencement of the year	407
Balance showing actual profits of the year ...	52,319

E.—GANGES DIVISION.

1.—AREA AND BOUNDARIES.

87. AREA.—The area of this Division is, approximately, as follows:—

	Square miles.
Kotdwára block	17
Láldháng	36
Khára	88
Chándi	32
Total	173

The Chándi block was taken over from the Superintendent of the Roorkee Work-shops on the 1st November, 1880.

The whole of the *leased* forests in the Central Circle, the area of which is not known, also belongs to the Ganges Division.

88. DEMARCATION.—The outer boundaries of the forests are permanently demarcated, but the Assistant Conservator reports that in some places the pillars are too far apart and a few intermediate ones are required.

89. The permanent demarcation of village lands within forest boundaries has progressed satisfactorily, notwithstanding the difficulty in getting workmen to come to such out-of-the-way places and the dread of a man-eating tiger which lives in these forests.

90. In the Khára block 30 first class and 113 intermediate pillars have been erected during the year at a cost of Rs. 171-7-0. All village lands between the Hiúl and Bhinj rivers have been demarcated, and it is expected that the work will be completed as far eastward as the Rawásan river before the rains of 1881.

91. The first class pillars are made of rough stone laid in lime mortar, with a good coating of lime plaster.

The intermediate pillars are sál poles 9 feet long and 6 inches in diameter. After being charred they are let into the ground about 3 feet, and round the base is placed a mound of stones and earth 2 feet high.

92. G. O. No. 847, dated 23rd August, 1880, forwarded to Conservator a copy of the sanctioned rules and regulations for the management of the forests leased from His Highness the Rája of Tehri. During October of that year the Conservator, in company with the divisional officer, fixed the boundaries of the portions of the leased forests which he proposed to declare reserved, and prepared a record of the rights to be exercised in them.

The report of this work was submitted to Government under cover of Conservator's No. 84, dated 8th November, 1880, with a request that, for reasons given, it should be submitted to the Rája through Government instead of by the Conservator direct. No reply has yet been received from the Rája, and consequently another year will probably pass away without anything being done towards completing this important work.

2.—PROTECTION AND IMPROVEMENT.

93. ESTABLISHMENTS.—There has not been any change.

94. BREACHES OF FOREST RULES.—In the Government forests there was one case in which four persons were involved, all of whom were convicted. In the leased forests there were 5 cases, involving 16 persons, 15 of whom were convicted.

95. ROADS AND BRIDGES.—All existing roads were repaired as usual. Seventeen miles of new roads were opened out at a cost of Rs. 192-5-4, *viz.*, from Kumaon to Chasaria, an entirely new road; and from Láldháng to Mithawála, an old unused track.

96. The Bhágirathi road has to be repaired partly by the Rája and partly by the Forest Department. The Rája is supposed to remove all slips which have fallen from above and keep the road to its original breadth of 10 feet; also to keep in order small retaining walls and small bridges. The Forest Department has to keep in repair all the extensive retaining walls and important bridges. Rs. 753-2-1 was spent on this work during the year.

97. The heavy rain and flood of last September utterly destroyed this road in many places and injured it more or less throughout. Up to the end of October, when the Assistant Conservator left the valley, the repairs done by the Rája were extremely poor; they generally consisted of opening out a path about one foot broad. The Assistant Conservator has been requested to report on these repairs as soon as he goes up the valley.

98. One pillar of the Bhuki suspension bridge was knocked down by the flood; and it cost Rs. 104 to repair that bridge. The iron work of all the suspension bridges from Bhuki to Lohari Nag was tarred and the planking of some renewed. The rest of the bridges will be looked to during the current summer.

99. BUILDINGS.—The doors and windows, and in some cases the roofs, of the houses in the Bhagirathi valley require some repairs, but the houses are generally in fair order.

There is no house in the lower forests of this Division, but arrangements are being made to build one as soon as possible.

3.—YIELD AND WORKING.

100. The yield of the Division is shown in the following statements :—

(*a*)

	TREES FELLED.									
	Sein.		*Inferior kinds.*		*Deodar (dead trees).*		*Box.*		*Total.*	
	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
Mature ...	830	16,134	137	7,883	1,901	136,681	121	221	2,989	160,919
Saplings ...	...	...	*13,628	41,423	...	...	...	...	13,628	41,423
Total ...	830	16,134	13,765	49,306	1,901	136,681	121	221	16,617	202,342

* For the Ganges Canal head-works.

(*b*)—*Timber removed by purchasers.*

		Cubic feet.
Sál		15,487 fallen trees.
Deodar		4,000 ,,
Chír		25 ,,
Sisham		
Sandan		
Tún		
Sein		31,115
Gosam and bel, 3,678 pieces ...		
Khair, 38 ,, ...		
Other inferior kinds		
Total ...		50,627

Note.—The 3,678 pieces of gosam and bel were cut from standing trees.

(c) The following statement shows the number of trees given free to villagers from the leased forests :—

Name of tree.	Green.	Dry.
Deodar	...	60
Pine	647	...
Other kinds	114	...
Total ...	761	60

101. During the working seasons of 1879 and 1880 Mr. Wilson felled 1,901 *dead* deodar trees in the leased forests and converted them into narrow-gauge sleepers, which he has floated down to the plains. He has over a lac of these sleepers on the Ganges at and below Hardwar, which he hopes to dispose of next winter.

102. One hundred and twenty-one box trees were felled in the leased forests above Kelsu. From these trees 152 pieces, measuring (with the bark on) 221 feet 2 inches, were prepared and sent to Messrs. Churchill and Sim of London, in accordance with the suggestion of the Government of India. The trees were felled during September and October, 1880, and the wood arrived in London in March, 1881. Messrs. Churchill and Sim report as follows on it :—

"It is fresh wood and the quality seems very good, although it is rather more brittle in grain than Turkey wood. The colour is first rate. The pieces were almost all more or less split and some a little knotty and twisted in growth. The sizes are very good. We have obtained for it the very extreme price of £30 per ton, but this could not be relied upon for a future shipment," &c. It appears that this consignment arrived when there was a great dearth of box-wood in the market.

Messrs. Churchill and Sim report that only 151 pieces were landed, which weighed 6 tons. 7cwt. 3qrs. 7lb., and that they are making a claim for the value of the piece short delivered.

Taking the exchange at 1*s.* 7¾*d.*, we may calculate that the consignment has sold for about Rs. 2,200.

The actual cost has been as follows :—

	Rs.	a.	p.
Cutting and logging and carriage from the forest to Rajpur ...	299	3	1
Carriage from Rajpur to Saháranpur	115	14	3
Railway freight from Saháranpur to Bombay	663	4	0
Messrs. King, King and Co.'s charges for agency, marking, clearing, shipping, &c.	193	8	0

Messrs. Churchill and Sim's charges have not yet been received.

This being the first consignment, expenses have probably been somewhat higher than they will be in future, and from enquiries which are being made I am inclined to think that we were charged too high a rate for railway freight.

4.—FINANCIAL RESULTS.

103. The following statement shows the results of the year :—

	1880-81.
	Rs.
Receipts	61,356
Expenditure	29,951
Surplus ...	31,405
Percentage of expenditure to receipts	·488

104. DETAIL OF REVENUE—

	Rs.	a.	p.
I*a*.—Ballas, tors, and ballis	6,471	12	0
Sein and other kinds of karis	8,100	0	0
Total under I*a*. ...	14,571	12	0
II*a*.—Timber removed by purchasers—			
Sál	5,827	3	1
Deodar	492	4	11
Sisham	229	9	7
Sandan	705	9	8
Tún	27	3	4
Chír	3	0	0
Sein	3,992	3	9
Bel	646	0	8
Gosham	1,467	5	7
Khair	22	2	0
Inferior kinds	209	7	4
Total under II*a*. ...	13,622	1	11
II*b*.—Firewood	358	0	9
Charcoal	305	15	9
	663	15	9
II*c*.—7,400,814 bamboos	27,442	3	2
II*d*.—Grazing and fodder grass	1,542	9	1
II*e*.—Other minor produce	2,014	9	1
III.—Confiscated, drift and waif wood	1,128	1	6
V*a*.—Fines	68	7	5
V*b*.—Refunds	277	2	5
V*c*.—Other sources	25	4	0
Total revenue ...	61,356	2	4

105. The value of depôt stock at the commencement of the year was *Nil.*
And at the close of the year 2,480
The outstandings at the close of the year were 762

106. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	14,572	I.	18,378	A $\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 1,167.
II.—Other revenue ...	46,784	II., III., and V.	8,624	A $\left(II+III+IV+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 1,167.
III.—Formation, protection and improvement of forests.	...	...	6,449	A $\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}$ + Direction Rs. 1,166.
Total ...	61,356	...	33,451	

107. The following statement shows the actual profits of the year:—

Particulars.	Amount.
	Rs.
Receipts during 1880-81	61,356
Expenditure ditto	29,951
Surplus ...	**31,405**
Value of timber in stock at commencement of the year ...	...
Ditto ditto close ditto ...	2,480
Difference in favour of the year to be added ...	2,480
Balance ...	**33,885**
Value of live and dead stock at commencement of the year ...	25,112
Ditto ditto close ditto ...	25,183
Balance to be added ...	**71**
Balance ...	**33,956**
Deduct amount of revenue realized on account of previous periods,	...
Add outstandings of the year, minus bad debts ...	*762
Add amount disbursed on account of previous periods ...	...
Deduct amount due on transactions of the year, but not yet paid...	†5,120
Deduct outstandings at commencement of the year ...	...
Balance showing actual profits of the year ...	**29,590**

108. As stated in paragraph 31 of last year's report, the Garhwál and Ganges Divisions now comprise the three old Divisions of Garhwál, Bhágirathi and Bijnor. The redistribution came into force on the 1st December, 1879, and therefore the receipts of 1880-81 cannot be compared with those of 1879-80 *by Divisions*. The following amalgamated statement will, however, show the comparison sufficiently clearly:—

Budget heads.	Receipts from the Garhwál, Bhágirathi, and Bijnor Divisions during 1878-79.	Receipts from the Garhwál and Ganges Divisions during 1879-80.	Receipts from the Garhwál and Ganges Divisions during 1880-81.
	Rs.	Rs.	Rs.
Ia.—Timber removed from the forests by Government agency.	70,103	59,699	54,276
II.—Timber and other produce removed from the forests by consumers or purchasers :—			
(a.)—Timber	32,568	32,166	58,392
(b.)—Firewood and charcoal ...	5,955	5,472	6,173
(c.)—Bamboos	21,635	44,663	52,954
(d.)—Grazing and fodder grass ...	2,420	4,356	3,937
(e.)—Other minor produce ...	7,776	7,511	9,827
III.—Confiscated, drift and waif wood ...	980	2,405	1,750
V.—Miscellaneous	558	1,053	708
Total ...	1,41,989	1,57,325	1,88,017

* Rs. 50 on account of contractors.
" 712 ditto disbursres.

† Due to a timber merchant who advanced money for timber.

The amounts received from sales of deodar sleepers and logs under I.*a.* (Rs. 1,01,457 during 1878-79 and Rs. 5,439 during 1879-80) have been omitted from the above statement in order to show the actual ordinary results more clearly, the sale of deodar being an extraordinary source of revenue which fluctuates considerably. No deodar sleepers or logs were sold during 1880-81.

CHAPTER III.

RESERVED AND PROTECTED FORESTS UNDER CHARGE OF REVENUE OFFICERS.

JHANSI FORESTS.

109. Mr. Deas, Officiating Deputy Commissioner, was in charge the whole year, except during April, May and June, when Mr. Adams held charge.

1.—AREA AND BOUNDARIES.

110. AREA.—There is no change in the area. The boundaries are demarcated.

2.—PROTECTION AND IMPROVEMENT.

111. BREACHES OF FOREST RULES.—There were 30 prosecutions, implicating 37 persons. Convictions were obtained in 29 cases, involving 36 persons. In 1879-80 there were only 7 prosecutions.

Mr. Deas is of opinion that "the great increase is attributable to increased energy and vigilance on the part of Debi Parshad, the Forester, and of the forest guards."

112. ROADS.—The forest road from Dhukwan to Simrabari was repaired at a cost of Rs. 39-14-0.

113. BUILDINGS.—The storehouses were repaired at a cost of Rs. 12-1-0.

114. REPRODUCTIVE MEASURES.—In the Magarpur forest 100 sisham trees were planted and some mahua seed sown.

In the Ganupura forest 100 sisham and 70 teak trees were planted and some mahua sown.

In the Dhukwan forest some mahua, teak, and babul seed was sown.

In the Bhasneo forest some mahua and babul seed was sown, and some babul was sown in Khairi Dhang.

Most of the trees planted this year are said to be alive. The officer in charge of the forests reports that "the mahua sowings have resulted in about 3,500 seedlings, at present in a healthy condition. The babul sowings were successful. The teak seed has not yet germinated."

The plantation work cost Rs. 471-14-9 during the year, of which Rs. 358-8-3 was for watering.

115. The following statement shows the number of trees alive in the different plantations and the areas sown :—

Name of forest.	*Trees planted and now alive.*		*Area of sowings of different kinds of tree seeds.*		
	Teak.	Sisham.	Mahua.	Babul.	Teak.
			Acres.	Acres.	Acres.
Dhukwan	600	46	5	2	3
Magarpur	...	400	4	...	...
Ganupura	350	250	3	...	...
Bhasneo	...	400	2	3	...
Khairi Dhang	...	...	...	16	...
Babul plots in pargana Moth ...	...	...	...	461	...

116. The Forest Officer is of opinion that the plantations in Magarpur and Bhasneo ought to be maintained, but should not beextended; that sowings of babul

seed in ravines within forest limits on the banks of the rivers Dhassan and Betwa should be continued; but that Sukwan-Dhukwan and Ganupura are the forests in which plantation work should be pushed on, as they are the two best forests in the division.

3.—YIELD AND WORKING.

117. Eight hundred and six kardhai trees were felled in the Babina forest, converted into poles and carted to the depôt at Jhánsi. At the close of the year there were 416 poles and 3,204 bamboos remaining in stock.

4.—FINANCIAL RESULTS.

118. The following statement shows the results of the last three years:—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	2,610	3,648	3,755
Expenditure	3,052	2,910	3,095
Deficit ...	442	...	...
Surplus ...	...	738	662
Percentage of expenditure to receipts	1·169	·797	·823

119. The receipts from sale of minor forest produce and from lease of grass lands amounted to Rs. 1,034 and Rs. 1,606 respectively, or Rs. 2,640 of the total gross revenue.

Of the total income, 34 per cent. was derived from head I., 64 per cent. from head II., and 2 per cent. from head V.

120. The only outstanding at the close of the year was Re. 1-12-6, due from a disburser.

121. The following statement shows the receipts and expenditure of the year under the three main budget headings:—

Headings.	Receipts.		Charges.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	1,298	I.	1,358	A. $(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}+$ Direction Rs. 67.
II.—Other revenue	2,457	II.,III.,&V.	513	A. $(II+III+IV+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}$ + Direction Rs. 67.
III.—Formation, protection and improvement of forests.	...	...	1,424	A. $(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3})+\frac{B}{3}+$ Direction Rs. 66.
Total ...	3,755	...	3,295	

LALITPUR FORESTS.

122. Mr. R. H. Story, Assistant Commissioner, was in charge throughout the year.

1.—AREA AND BOUNDARIES.

123. There was no change either in the area or the boundaries.

2.—PROTECTION AND IMPROVEMENT.

124. Breaches of forest rules.—Twenty-nine persons were prosecuted, of whom 26 were convicted.

125. Buildings.—Three new chaukis at Parol, Dheri Saugor and Jamunia were built at an aggregate cost of Rs. 99.

The existing chaukis and depôts were repaired at a cost of Rs. 50.

3.—YIELD AND WORKING.

126. The sales of bamboos and poles from depôts have again increased, as may be seen from the following statement:—

1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
587	703	923	539	857	1,686	2,009

There are now 12 carts and 24 bullocks belonging to the Department, and Mr. Story says that it may be necessary to buy a few more, as the demand for timber and bamboos is increasing, and he cannot supply the depôts fast enough.

4.—FINANCIAL RESULTS.

127. The following statement shows the results of the last three years:—

	1878-79.	1879-80.	1880-81.
	Rs.	Rs.	Rs.
Receipts	5,975	7,023	8,076
Expenditure	4,358	3,585	3,977
Deficit ...	...	...	...
Surplus ...	1,617	3,438	4,099
Percentage of expenditure to receipts	·729	·510	·492

128. There is an increase of revenue under every heading, the most important being an increase of Rs. 133 under I.*a*.
„ 189 „ I.*c*.
„ 287 „ II.*a*.
„ 226 „ II.*c*.
„ 184 „ II.*d*.

129. The value of stock at the commencement of the year was Rs. 602, and at the close of the year Rs. 802.

There were no outstandings.

130. The following statement shows the receipts and expenditure of the year under the three main budget headings:—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Departmental timber operations.	2,009	I.	1,660	A. $\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B.}{3}+$ Direction Rs. 167.
II.—Other revenue	6,067	II.,III.,&V.	1,544	A. $\left(II+III+IV+\frac{VII+IX}{3}\right)+\frac{B.}{3}$ + Direction Rs. 167.
III.—Formation, protection, and improvement of forests.	...	...	1,273	A. $\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B.}{3}+$ Direction Rs. 166.
Total ...	8,076	...	4,477	

CHAPTER IV.

GENERAL REMARKS.

131. The year under report was a favourable one for revenue; grain was cheap, and therefore there was a good demand for all forest produce. The surplus of the

year was Rs. 1,95,169. Deducting Rs. 495, the receipts from deodar and fir from the leased forests, we have a surplus of Rs. 1,94,674 for the 1,568 square miles of reserved and protected forests, or Rs. 124-2-6 per square mile. The *actual* surplus is somewhat more than that, for the expenditure on the *leased forests* is included in the account.

132. The Inspector-General made a tour through the Kumaon, Garhwál and Ganges Divisions during March, 1881. I accompanied him.

OFFICERS' CHARGES.

133. (*a*.)—Mr. Braidwood, Assistant Conservator, 1st grade, held charge of the Naini Tál Division the whole year. He was also in charge of Conservator's Office.

(*b*)—Mr. Brereton, Deputy Conservator, 1st grade, was in charge of the Ránikhet Division all the year, except from the 23rd November to the 15th February, when he was on deputation in the Jhánsi Division and the Ganges Canal Plantations. During his absence Mr. Braidwood carried on the current duties of the Ránikhet Division, in addition to his own work.

(*c*)—Major Campbell, Deputy Conservator, 2nd grade, had charge of the Kumaon Division throughout the year.

(*d*)—Mr. O. Greig, Assistant Conservator, 1st grade, was in charge of the Garhwál Division the whole year.

(*e*)—Mr. Wilmot, Assistant Conservator, 1st grade, had charge of the Ganges Division the whole year.

134. I visited all the Divisions several times during the year, and was thoroughly satisfied with all the officers' work.

I also inspected the plantations of the Eastern Jumna Canal.

135. My office was kept in perfect working order by Mr. Braidwood, ably aided by Mr. Sheils, who conducted his duties as Head Clerk with his usual ability and intelligence.

136. As the divisional fire conservancy reports do not reach the head-office until after the Conservator's annual report is written, it is necessary to report the results of fire conservancy in the concluding paragraph of the report, which here follows.

RESULTS OF FIRE CONSERVANCY OPERATIONS FOR THE PERIOD FROM THE COMMENCEMENT OF THE RAINS OF 1880 TO THE COMMENCEMENT OF THE RAINS OF 1881.

137. (*a*) **Naini Tal Division.**—The whole of the forests of this Division, the approximate area of which is 19,200 acres, were attempted to be protected from fire. Only one fire occurred. This was in the Hinnan pine forests, and 47 acres were burnt. The fire was caused by a native contractor of the Public Works Department having left his pipe in the grass above the new road which is being made there. He was fined Rs. 50. The fire conservancy cost Rs. 317, or about 3⅓ pie per acre.

(*b*). **Ranikhet Division.**—Fire conservancy was attempted over the same areas which were protected last year, *viz.* :—

				Acres.
Ranikhet reserved forest	...	...	...	4,800
Ganiadeoli closed protected forests		...	...	320
Kathallekh ditto	...	...	...	320
Shauni protected forests	...	...	...	2,560
		Total	...	8,000

There were no failures. The cost was Rs. 153, or about 3¾ pie per acre.

(c.) **Kumaun Division.**—The same areas which were attempted to be protected from fire last year were again attempted this year. The following is a detail of them :—

				Acres.
Western Kumaun ...	Chilkia (Mohán),	Block	I. ...	46,240
	Kotah,	,,	III. ...	23,298
	Garibulchand	,,	II. ...	7,112
Eastern Kumaun ...	Horai,	,,	V. ...	2,565
	Súdlimat & Jaunla sál	,,	VII. ...	8,320
			Total ...	87,535

The cost was Rs. 6,255, or about 13¾ pie per acre. Four fires occurred, by which 452 acres were burnt, as follows :—

On the 24th December, 1880, 5 acres of the Jaunla sál forest at Baitáli were burnt. The fire got into the forest when the traces were being burnt. On the 27th February, 1881, 5 acres of the Kotah block at Duli Sot were burnt. The fire was supposed to have been lighted by collectors of forest produce. Very little damage was done.

On the 3rd May, 1881, 280 acres of the Kotah block at Jhára Sot were burnt. The fire got in from the outside and was put out at once, but a dead tree remained alight and set fire to the grass again. The contractor and the guards were punished.

On the 22nd May, 1881, 162 acres of the Kotah block at Danquira and Jamgarh were burnt. This fire is supposed to have originated from people coming to grind flour at a mill close by in the Massán-ke-Gaja Sot.

(d) **Garhwal Division.**—The following are the areas which were attempted to be protected from fire during the dry season of 1881 :—

	Acres.
Dhikála, Pátli Dún	16,036
Shishamkhata, ditto	2,020
Paterpáni ... } Maunpáni ... } Jamnagwár ... }	21,070
Jhára Sot ... } Jamnoli ... }	6,887
Bhakwa ... } Domunda ... }	11,357
Pípal Soti ... } Gonjpáni ... }	3,978
Phulai .. } Gonjera ... }	6,957
Rehar	12,478
Total ...	80,783

The area attempted to be protected during 1880 was 61,095 acres.

The following comprise the 19,688 acres added during 1881 :—

	Acres.
Bhokwa ... } Domunda ... }	253
Phulai ... } Gonjera ... }	6,957
Rehar	12,478

The total cost of the fire conservancy operations for the year was Rs. 4,934-2-4, or about 11¾ pie per acre.

Nine fires occurred during the year, by which 10,846 acres were burnt. But it must be borne in mind that 9,492 acres of the portion burnt belonged to the Rehar forest, which is a very dry forest, situated outside the hills, and was only attempted in

1881. The Assistant Conservator *expected* failures here, for his arrangements could not be properly completed the first year.

The following is an account of the fires :—

DHIKÁLA.—Three fires occurred. The first and second were on the 31st December and the 6th January, and in the same place; 236 acres of grassy plain were burnt. The first was caused by a contractor, trying to burn his trace contrary to orders, and the second came from outside and got across the trace. The third occurred through a piece of burning wood not having been extinguished on a fire trace. Only 3 acres were burnt.

SHISHAMKHATA.—Three acres of grassy plain were burnt when burning a fire trace.

PATERPÁNI, MAUNPANI, AND JAMNAGWÁR.—When burning some outside grass on the 3rd May a spark was blown across the trace into the protected portion, and 1,060 acres were burnt. The fire was stopped by the cross traces at Maunpáni and Jamnágwár, although a strong west wind was blowing at the time.

JHÁRA SOT AND JAMNOLI.—One fire occurred on the 30th January and burnt 32 acres. It was caused by a fire spreading from an exporter's camp across the road and fire trace. Anther fire occurred on the 16th February and burnt 20 acres. When burning some outside grass a spark was blown across the road and trace and set fire to the forest.

REHAR.—Two fires occurred. Both of these were, without doubt, caused by incendiaries, for they were lighted within the fire traces. The first occurred about 11 A M. on the 2nd May, when a strong hot west wind was blowing. It was lighted well to windward, and as the grass was very tall and dry it was of course quite uncontrollable; 9,482 acres were burnt. A reward of Rs. 50 was offered for the discovery of the incendiary, and the Collector of Bijnor at once sent out a Deputy Inspector of Police to make enquiries. Only 10 acres were burnt by the second fire. This was a *very* bold attempt, for it was made when the police were still on the spot enquiring about the former fire. About 7 P. M. on the 2nd June some one set fire to the unburnt portion in seven different places, but the grass being then green and there being no wind blowing, the police were able to extinguish the fire before it did any damage. I have since heard that the police have been unable to discover the incendiaries, but there is some reason to suppose that the fires were lighted by native shikaris.

(*e*) **Ganges Division.**—The following are the areas which were attempted to be preserved from fire during the dry season of 1881 :—

					Acres.
Tangnore (leased) deodar forests			...	...	8,872
Pápidánda	...	...	...	...	521
Hayara	...	...	...	...	2,000
Jogichaur	...	...	...	...	1,500
Koria	...	...	...	...	3,000
Andher Majhera		...	...	...	1,500
			Total	...	17,393

The four last-named forests, aggregating 8,000 acres, were added during the year.

The leased forests were protected by the establishment and cost nothing extra.

The protection of the 8,521 acres of Government forests cost Rs. 481-14-1, or a little less than 11 pie per acre.

There were no failures.

(*f*) **Jhansi Division.**—The areas given by the Deputy Commissioner as having been attempted to be preserved from fire during the dry season of 1881 are as follows:—

				Acres.
Sakwan Dhakwan	...	...	...	498
Magarpur and Bhasnco	...	...	...	18
		Total	...	516

The cost was Rs. 140, or about 52 pie per acre.

The Deputy Commissioner has been asked if the work cannot be done cheaper.

There were no failures.

(*g*) **Lalitpur Division.**—The same areas were attempted as last year, *viz.* :—

				Acres.
Deogarh	...	...	...	998
Garaulí	...	...	...	751
		Total	...	1,749

The cost was Rs. 52, or about 5¾ pie per acre.

There were no failures.

OFFICE OF CONSERVATOR OF FORESTS,
CENTRAL CIRCLE, N.-W. P. AND OUDH:
Naini Tál, the 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle,
N.-W. P. and Oudh.

STATEMENTS.

FORM No. 57.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Financial results of the year 1880-81.

Divisions.	*Timber and other produce removed from the forests by Government Agency*		*Other revenue.*		*Formation, protection and improvement of forests.*	*Total.*		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Naini Tál	33,162	33,777	2,620	5,108	6,797	35,782	45,682	
Ranikhet	31,020	21,357	5,584	4,898	7,685	36,604	33,940	
Kumaon	75,299	34,161	1,10,072	24,959	25,339	1,85,371	84,459	
Garhwál	39,704	19,976	86,958	17,693	19,464	1,26,662	57,133	
Ganges	14,572	18,378	46,784	8,624	6,449	61,356	33,451	
Jhánsi	1,298	1,358	2,457	513	1,424	3,755	3,295	
Lalitpur	2,609	1,660	6,067	1,544	1,273	8,076	4,477	
Total ...	1,97,064	1,30,667	2,60,542	63,339	68,431	4,57,606	2,62,437	

Naini Tál:
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 45.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Area of reserved forests, 1880-81.

Division of range.	Name of forest and civil district.	*Area on 1st April*, 1880.		*Added during the year.*		*Excluded or transferred to other heads.*		*Total on 31st March*, 1881.		Number and date of notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Kumaon district.										
Kumaon ...	Block No. 1	126	80,467	...	...	...	...	126	80,467	There have been none during the year.	The areas are subject to correction on completion of survey by Forest Survey Department.
	" 2	17	10,937	...	...	...	...	17	10,937		
	" 3	55	35,200	...	...	...	...	55	35,200		
	" 5	103	65,606	...	...	...	...	103	65,606		
	" 7	14	8,960	...	...	...	...	14	8,960		
	" 8	230	1,47,520	...	...	...	...	230	1,47,520		
	" 9	68	43,520	...	...	...	...	68	43,520		
	" 10	7	4,320	...	...	...	...	7	4,320		
	" 11	7	4,640	...	...	...	...	7	4,640		
	" 12	8	5,440	...	...	...	...	8	5,440		
	...	...	320	...	...	...	...	...	320		
	Total ...	635	4,06,930	...	...	...	...	635	4,06,930		

FORM No. 45.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Area of reserved forests, 1880-81—(concluded).

Division of range.	Name of forest and civil district.	Area on 1st April, 1880.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March, 1881.		Number and date of notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
Ránikhet ...	*Kumaon district.*										
	Block No. 11	7	4,480	...	...	...	...	7	4,480	There have been none during the year.	These areas are subject to correction on completion of survey by Forest Survey Department.
Garhwál ...	*Garhwál district.*										
	Block No. I., Patli Dún ...	237	1,52,000	...	...	...	...	237	1,52,000		
	" II., Kotri Dún ...	180	1,15,520	...	...	...	...	180	1,15,520		
	" VI., Kartia	1	800	...	...	...	...	1	800	Ditto.	
	Bijnor district.										
	Chandi	29	18,497	...	...	...	...	29	18,497		
	Rehar	25	15,719	...	...	...	...	25	15,719		
	Total ...	472	3,02,536	...	...	...	...	472	3,02,536		
Ganges ...	Native Garhwál	A portion of the forests leased from His Highness the Raja of Tehri.									
	Garhwál district.										
	Block No. 3, Sanch	17	10,880	...	...	...	...	17	10,880	* Revenue (Forest) Department, North-Western Provinces and Oudh, Notification No 754, dated 14th July, 1880.	The areas are subject to correction.
	" 4, Laldháng	36	23,360	...	...	...	...	36	23,360		
	" 5, Khara	88	56,320	...	...	...	...	88	56,320		
	Chandi	...	...	*32	*20,882	...	...	32	20,882		
	Total ...	141	90,560	32	20,882	...	...	173	1,11,442		
	Jhánsi district.										
Jhánsi ...	Jhánsi	16	10,130	...	...	...	...	16	10,130	There have been none during the year.	Ditto.
	Mau	9	6,084	...	...	...	...	9	6,084		
	Garotha	8	5,127	...	...	...	...	8	5,127		
	Moth	4	2,272	...	...	...	...	4	2,272		
	Total ...	37	23,613	...	...	...	...	37	23,613		
	Lalitpur district.										
Lalitpur ...	Lalitpur	...	255	...	...	...	...	...	255		
	Bansi	7	4,733	...	...	...	...	7	4,733		
	Talbahat	18	11,653	...	...	...	...	18	11,653		
	Balabahat	47	30,186	...	...	...	...	47	30,186	Ditto ...	Ditto.
	Banpur	7	4,745	...	...	...	...	7	4,745		
	Mahroni	2	1,283	...	...	...	...	2	1,283		
	Maraura	62	40,290	...	...	...	...	62	40,290		
	Total ...	143	93,145	...	...	...	...	143	93,145		
	Total area of reserved forests ...	1,435	9,21,264	32	20,882	...	...	1,467	9,42,146		

FORM No. 45.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Area of protected forests, 1880-81.

Division or range.	Name of Forest and Civil District.	Area on 1st April, 1880.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March, 1881.		No. and date of notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Kumaon District.										
Naini Tál ...	Naini Tál	38	24,408	...	...	...	...	38	24,408	There have been none during the year.	The area is subject to correction.
	Kumaun District.										
Bánikhet ...	Block, No. 1, Machor	...	211	...	...	...	...	...	211	Ditto ...	Ditto.
	" 2, Bhatronj	9	5,760	...	...	...	...	9	5,760		
	" 3, Tetalikhet	7	4,480	...	...	...	...	7	4,480		
	" 4, Siun	1	640	...	...	...	...	1	640		
	" 5, Bellekh	1	640	...	...	...	...	1	640		
	" 6, Kathallekh	3	1,920	...	...	...	...	3	1,920		
	" 7, Ganiadeoli	2	1,280	...	...	...	...	2	1,280		
	" 8, Karchuli	...	203	...	...	...	...	...	203		
	" 9, Chilianao	1	640	...	...	...	...	1	640		
	" 10, Chaubattia	2	1,280	...	...	...	...	2	1,280		
	" 12, Padholi	1	640	...	...	...	...	1	640		
	" 13, Dwarson	3	1,920	...	...	...	...	3	1,920		
	" 14, Airadeo	26	16,640	...	...	...	...	26	16,640		
	" 15, Siahi Devi	3	1,920	...	...	...	...	3	1,920		
	Total ...	59	38,174	...	...	...	...	59	38,174		
	Lalitpur District.										
Lalitpur ...	Lalitpur	...	65	...	...	...	...	...	65	Ditto ...	Ditto.
	Talbehat	3	2,363	...	...	...	...	3	2,363		
	Total ...	3	2,428	...	...	...	...	3	2,428		
	Total area of protected forests ...	100	65,010	...	...	...	...	100	65,010		

Naini Tál,
The the 8th July, 1881.

G GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 46.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Area of plantations, 1880-81.

Division.	Name of plantation.	On 1st April, 1880. Area.	On 1st April, 1880. Total cost.	During 1880-81. Area added.	During 1880-81. Cost.	On 31st March, 1881. Total area.	On 31st March, 1881. Total cost.	Remarks.
		Acres.	Rs. a. p.		Rs. a. p.	Acres.	Rs. a. p.	
Kumaon ...	Varous plantations imperfectly stocked, incomplete or success uncertain.	...	672 0 0	...	(a) 582 0 0	...	1,254 0 0	(a). Part of expenditure under A. VIII.f., *vide* summary of the year.
Naini Tal,	Ayarpatha	5	13 0 0	...	3 0 0	5	16 0 0	
	Jabar	140	797 0 0	...	31 0 0	140	828 0 0	
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	867 0 0	...	673 0 0	...	1,540 0 0	
	Total ...	145	1,677 0 0	...	(b) 707 0 0	145	2,384 0 0	(b). Expenditure under A. VIII.f., *vide* summary of the year.
Ranikhet	Jakhdeo (upper)							
	Ditto (lower)							
	Garkhet	367	11,538 0 0	...	60 0 0	367	11,598 0 0	
	Jainoli							
	Darimkhet							
	Ghingaru khál	...	1,271 0 0	...	146 0 0	...	1,417 0 0	
	Various other plantations imperfectly stocked, incomplete or success uncertain.							
	Total ...	367	12,809 0 0	...	(c) 206 0 0	367	13,015 0 0	(c). Part of expenditure under A. VIII.f.
Garhwál	Baxar	...	497 0 0	...	...	...	(d) 497 0 0	(d). Expenditure incurred in former years on a plantation since abandoned, as reported in last year's form No. 46.
	Prempuri and Saneh	...	60 0 0	...	139 0 0	...	(e) 199 0 0	(e). Expenditure incurred under A. VIII.f. on plantations of fruit trees; area not entered as yet.
	Total ...	...	557 0 0	...	139 0 0	...	696 0 0	
Ganges ...	...	...	...	...	...	...	...	
Jhánsi ...	Sakwan and Dakwan	183	180 0 0	...	174 0 0	183	354 0 0	
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	322 0 0	...	298 0 0	...	620 0 0	
	Total ...	183	502 0 0	...	(f) 472 0 0	183	974 0 0	(f). Part of expenditure under A. VIII.f., *vide* summary of the year.
Lalitpur ...	...	...	...	...	...	...	...	
	Total ...	695	16,217 0 0	...	2,106 0 0	695	18,323 0 0	

Naini Tál,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 47.

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Area of forest tracts protected from fire during the dry season of 1881 (*to accompany report*, 1880-81.)

Division.	Forest tracts.	*Up to 30th June*, 1880.		*During dry season of* 1881.					Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 30th June, 1881.		
		Acres.	Rs. a. p.	Acres.			Rs. a. p.	Rs. a. p.		
Naini Tál ...	Naini Tál	19,037	2,069 0 0	19,200	47	19,153	317 0 0	2,326 0 0	1876	*Vide* para. 137 of the annual progress report.
Ránikhet ...	Ránikhet reserved forest ...	4,800	707 0 0	4,800	...	4,800	59 0 0	766 0 0	1874	
	Ganiadeoli closed protected ...	303	151 0 0	320	...	320	16 0 0	167 0 0	1878	
	Kathallekh ditto ...	320	167 0 0	320	...	320	17 0 0	184 0 0	1878	
	Shauni protected	2,560	51 0 0	2,560	...	2,560	61 0 0	112 0 0	1880	
	Total ...	7,983	1,076 0 0	8,000	...	8,000	153 0 0	1,229 0 0		
Kumaon.										
Western Kumaon ...	Chilkia (Mohan), Block I. ...	45,981	15,170 0 0	46,240	...	46,240	3,657 0 0	18,827 0 0	1873	
	Kotah, Block III.	23,251	3,800 0 0	23,298	447	22,851	1,341 0 0	5,141 0 0	1876	
	Garibulchand, Block II. ...	7,112	3,778 0 0	7,112	...	7,112	357 0 0	4,135 0 0	1876	
Eastern ditto ...	Horai, Block V.	2,565	...	2,565	...	2,565	264 0 0	5,287 0 0	1876	
	Sudlimat and Jaunla Sal, Block VII.	8,320	4,387 0 0	8,320	5	8,315	636 0 0			
	Total ...	87,229	27,135 0 0	87,535	452	87,083	6,255 0 0	33,390 0 0	...	
Garhwál ...	Dhikála	16,036	16,377 0 0	16,036	239	15,797	4,391 0 0	20,698 0 0	1873	
	Patli Dún									
	Shishamkhata, Patli Dún ...	2,020		2,020	3	2,017			1876	
	Paterpáni	21,070		21,070	1,060	20,010			1877	
	Maunpáni									
	Janmagwar									
	Jhara Sot	6,887		6,887	52	6,835				
	Jamnoli									
	Bhakwa	11,104		11,357	...	11,357				
	Domunda									
	Pipal Soti	3,978		3,978	...	3,978				
	Goujpáni									
	Phulai	...		6,957	...	6,957			1881	
	Gaujera									
	Rehar	...		12,478	9,492	2,986	643 0 0	643 0 0	1881	
	Total ...	61,095	16,377 0 0	80,783	10,846	69,937	4,964 0 0	21,341 0 0	...	

FORM No. 47.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Area of forest tracts protected from fire during the dry season of 1881 (*to accompany report*, 1880-81)—(concluded.)

Division.	Forest tracts.	*Up to 30th June*, 1880.		*During dry season of* 1881.					Year when protection commenced.	Remarks.
		Area actually protected	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 30th June, 1881.		
		Acres.	Rs. a. p.	Acres.			Rs. a. p.	Rs. a. p.		
Ganges	Tangnore (leased) deodar forest,	8,870	32 0 0	8,872	...	8,872	...	32 0 0	1876	
	Papidanda	521	689 0 0	521	...	521	147 0 0	836 0 0	1875	
	Hazara	...	...	2,000	...	2,000	98 0 0	98 0 0	1881	
	Jogichaur	...	...	1,500	...	1,500	104 0 0	104 0 0		
	Koria	...	...	3,000	...	3,000	108 0 0	108 0 0		
	Andhermajhera	...	...	1,500	...	1,500	24 0 0	24 0 0		
	Total ...	9,391	721 0 0	17,393	...	17,393	481 0 0	1,202 0 0	...	
Jhánsi	Sakwan Dhakwan	630	775 0 0	498	...	498	122 0 0	897 0 0	1874	*Vide* para. 137 of the annual progress report.
	Magarpur Bhasneo	...	...	18	...	18	18 0 0	18 0 0	1881	
	Total ...	630	775 0 0	516	...	516	140 0 0	915 0 0	...	
Lalitpur	Deogarh	998	381 0 0	998	...	998	52 0 0	433 0 0	1875	
	Garauli	751		751	...	751				
	Total ...	1,749	381 0 0	1,749	...	1,749	52 0 0	433 0 0	1875	
	Grand Total ...	1,87,119	48,474 0 0	2,15,176	11,345	2,03,831	12,362 0 0	60,836 0 0	...	
	Charged in previous years ...			...	...	...	...	48,474 0 0	...	* Rs. 2,885 of the A. VIIIe, expenditure for 1880-81, included in amount charged in previous years.
	1880-81 ...			...	...	...	...	* 8,334 0 0		
	1881-82 ...			...	...	...	...	4,028 0 0		
						Total ...	...	60,836 0 0		

Naini Tal:
Dated the 8th July 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 48 —(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Prosecutions for breaches of forest rules, 1880-81.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorized felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other offences.		TOTAL.				REMARKS.
									Prosecutions.		*Convictions.*		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Naini Tál Division, Kumaon District ...	1	1	18	36	...	...	4	6	23	43	16	30	By the Assistant Conservator.
Ránikhet Division, Kumaon District ...	...	...	28	65	8	16	1	16	*37	97	33	82	* 10 cases tried by the Cantonment Magistrate, Ránikhet, and 3 cases, involving 11 persons, for unauthorized felling pending on 31st March, 1881.
Kumaon Division, Kumaon District ...	10	21	93	189	6	33	112	248	221	491	198	397	All tried by the divisional officers.
Garhwál Division, Garhwál District ...	2	4	23	51	1	2	33	54	†59	111	43	73	† 3 cases tried by the Magistrate of Bijnor, 12 by the Senior Assistant Commissioner, Garhwál, and 44 by the forest officer.
Ganges Division, Garhwál District ...	1	4	2	15	...	...	3	4	‡6	20	5	19	‡ 1 case tried by the District Magistrate and 5 cases by His Highness the Raja of Tehri.
Jhánsi Division, Jhánsi District ...	...	...	30	37	...	...	...	...	30	37	29	36	All tried by the district authorities.
Lalitpur Division, Lalitpur District ...	...	...	9	19	...	...	3	10	12	29	12	26	Ditto.
Total ...	14	30	203	409	15	51	156	338	383	828	336	663	

NAINI TÁL,
The 8th July, 1881.

G. WEIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 49—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, CENTRAL CIRCLE.

Summary of Revenue of the different divisions for 1880-81.

Budget heads—Receipts.	Direction.	Naini Tál Division.	Kumaon Division.	Ránikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency :—									
(a.)—Timber	...	10,427 5 4	75,299 4 4	...	39,704 1 9	14,571 12 0	68 6 3	287 1 0	1,40,357 14 8
(b.)—Firewood and charcoal	...	22,732 5 1	...	31,019 15 10	...	...	712 12 1	...	54,465 1 0
(c.)—Bamboos	...	...	...	...	...	...	39 7 11	1,721 11 3	1,761 3 2
(d.)—Sandal wood	...	...	...	...	...	...	...	...	...
(e.)—Grass and other minor produce	...	2 12 0	...	...	...	...	477 3 7	...	479 15 7
II.—Timber and other produce removed from the forests by consumers or purchasers :—									
(a.)—Timber	...	388 0 4	64,992 3 8	3,952 1 0	44,770 1 7	13,622 1 11	18 9 4	1,201 15 9	1,28,945 1 7
(b.)—Firewood and charcoal	...	1,738 6 0	5,786 6 4	370 6 9	5,509 5 3	663 15 9	226 2 8	62 2 0	14,356 12 9
(c.)—Bamboos	...	44 12 0	11,290 8 10	...	25,512 4 10	27,442 3 2	4 6 0	1,876 13 3	66,171 0 1
(d.)—Grazing and fodder grass	...	135 14 6	10,966 6 0	500 0 0	2,394 8 5	1,542 9 1	1,554 0 0	1,716 8 0	18,109 14 0
(e.)—Other minor produce	...	131 4 0	16,632 6 1	600 3 6	7,812 10 3	2,014 9 1	156 10 9	1,209 8 0	28,957 3 8
III.—Confiscated, drift and waif wood	...	1 12 0	298 6 3	...	621 15 0	1,128 1 6	...	0 3 6	2,050 6 3
IV.—Revenue from forests not managed by Government :—									
(a.)—Duty on foreign timber and other forest produce ...	...	...	...	...	...	...	...	...	...
(b.)—Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...
V.—Miscellaneous :—									
(a.)—Fines and forfeitures	...	177 8 0	558 6 11	84 12 0	130 15 8	68 7 5	...	...	1,020 2 0
(b.)—Refunds	...	...	...	...	20 13 6	277 2 5	0 3 0	...	298 2 11
(c.)—Other sources	...	2 0 6	247 4 5	77 0 8	185 2 3	25 4 0	96 15 2	...	633 11 0
Total Receipts ...	...	35,781 15 9	1,85,371 4 10	36,604 7 9	1,96,661 14 6	61,356 2 4	3,754 12 9	8,075 14 9	4,57,606 8 8

CALCUTTA,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General. (Forests).

FORM No. 49—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Summary of expenditure of the different Divisions for 1880-81.

Budget heads.	Direction.	Naini Tál Division.	Kumaon Division.	Ránikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Total.
A.—CONSERVANCY AND WORKS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p
I.—*Timber and other produce removed from the forests by Government agency:—*									
(a.)—Timber	...	8,076 6 6	16,941 15 4	...	6,558 7 4	8,288 12 10	12 1 8	10 2 3	39,887 13 11
(b.)—Firewood and charcoal	...	20,537 11 4	...	16,413 0 0	...	...	374 5 3	...	37,325 0 7
(c.)—Bamboos	...	...	...	...	...	...	5 12 0	429 4 0	435 0 0
(d.)—Sandal wood	...	...	...	...	...	...	...	...	...
(e.)—Grass and other minor produce	...	...	...	...	...	...	307 6 9	...	307 6 9
II.—*Timber and other produce removed from the forests by consumers or purchasers*	...	...	8,828 14 2	...	4,800 0 2	2,919 2 8	...	694 7 3	17,242 8 3
III.—*Confiscated, drift and waif wood*	...	...	...	...	532 10 10	4 9 0	...	...	537 3 10
IV.—*Revenue from forests not managed by Government:—*									
(a.)—Duty on foreign timber and other forest produce...	...	...	...	...	...	...	...	...	...
(b.)—Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...
V.—*Rent of leased forests and payments to shareholders in forests managed by Government*...	...	...	...	...	...	4,000 0 0	...	...	4,000 0 0
VI.—*Live Stock, Stores, Tools and Plant:—*									
(a.)—Purchase of cattle	...	...	...	...	...	...	...	63 13 6	63 13 6
(b.)—Feed and keep of cattle	...	...	1,990 0 10	...	1,789 8 9	598 9 9	270 5 4	609 5 0	5,257 13 8
(c.)—Stores, tools and plant	23 15 11	109 12 0	186 6 11	91 0 6	325 13 6	180 10 0	20 0 0	70 0 0	1,007 10 10
VII.—*Communications and Buildings:—*									
(a.)—Roads and bridges	...	380 5 0	8,035 11 1	193 8 3	9,820 0 0	2,011 0 5	39 14 0	...	20,480 6 9
(b.)—Buildings	108 6 6	4,784 10 3	1,440 2 10	47 10 8	350 0 0	79 9 9	11 5 0	149 8 6	6,971 5 6
(c.)—Other works	...	...	28 0 0	...	...	...		...	28 0 0
VIII.—*Demarcation, improvement and extension of forests:—*									
(a.)—Demarcation	...	138 14 5	883 5 5	351 4 0	354 12 0	127 9 0	...	...	1,855 12 10
(b.)—Compensation for land and rights	5,311 14 0	300 0 0	...	...	...	...	...	...	5,611 14 0
(c.)—Surveys and working plans	...	...	130 4 0	0 8 6	1,116 10 9	...	5 0 0	...	1,252 7 3
(d.)—Plantations	...	...	...	1,473 8 4	...	...	...	...	1,473 8 4
(e.)—Protection from fires	...	487 4 5	5,621 8 5	268 3 1	4,435 15 3	214 0 5	140 0 0	52 0 9	11,219 0 4
(f.)—Other works	686 8 10	707 10 9	1,486 12 10	646 12 8	139 15 4	19 11 0	621 15 2	...	4,309 6 7
IX.—*Miscellaneous:—*									
(a.)—Refunds	...	307 0 0	...	...	9 5 0	...	...	...	316 5 0
(b.)—Law charges	...	...	...	...	...	...	...	...	...
(c.)—Other charges	...	49 15 6	...	31 15 1	8 14 0	598 9 4	58 12 6	13 8 0	761 10 5
Total A.—Conservancy and Works ...	6,130 13 3	35,879 10 2	45,573 1 10	19,517 7 1	30,242 0 11	19,042 4 2	1,866 13 8	2,092 1 3	1,60,344 4 4

CALCUTTA,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 49—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Summary of expenditure of the different Divisions for 1880-81.

Budget heads.	Direction.	Naini Tál Division.	Kumaon Division.	Ránikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Total.
B.—ESTABLISHMENTS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—*Salaries* :—									
(a.)—Conservators	16,294 10 0	...	...	...	...	...	...	...	16,294 10 0
(b.)—Superior officers	...	5,400 0 0	9,490 8 0	6,954 13 5	8,186 10 8	3,853 3 8	...	...	33,885 3 9
(c.)—Subordinate forest and depôt establishments ...	...	1,026 2 0	9,118 10 7	1,911 14 2	6,485 15 0	3,213 4 11	1,102 12 2	1,559 11 10	24,418 6 8
(d.)—Office establishments	3,756 0 0	240 0 0	1,989 0 0	540 0 0	1,886 10 3	1,408 13 9	60 0 0	204 0 0	10,084 8 0
(e.)—Deputation and special allowances ...	...	...	3,000 0 0	1,800 0 0	...	...	...	...	4,800 0 0
II.—*Travelling Allowances* :—									
(a.)—Conservators	1,212 0 0	...	...	...	...	...	...	...	1,212 0 0
(b.)—Superior officers	...	672 0 0	1,625 8 0	1,044 7 0	1,373 4 0	1,244 4 0	...	...	5,959 7 0
(c.)—Subordinate forest and depôt establishments ...	...	...	117 0 1	...	19 8 0	...	24 0 0	70 8 2	231 0 3
(d.)—Office establishments	...	2 14 11	405 10 2	36 5 9	345 14 3	426 4 2	...	...	1,217 1 3
III.—*Contingencies* :—									
(a.)—Stationery	8 3 3	2 8 0	90 10 1	18 11 6	112 2 0	94 12 6	12 0 0	18 2 0	357 1 4
(b.)—Carriage of tents and records	451 0 0	163 11 10	338 7 10	74 5 4	166 12 4	470 11 7	...	...	1,665 0 11
(c.)—Rent, rates and taxes	24 0 0	...	26 0 0	...	22 0 0	...	12 0 0	...	84 0 0
(d.)—Pay of police guards	293 0 0	...	...	...	...	...	...	...	293 0 0
(e.)—Official postage	128 12 6	12 13 6	122 4 6	33 6 6	99 13 0	53 8 0	9 9 6	32 0 0	492 3 6
(f.)—Sundries	220 3 11	281 13 0	242 15 5	8 15 0	192 11 11	144 4 9	7 14 0	0 2 9	1,099 0 9
Total, B.—Establishments ...	22,387 13 8	7,801 15 3	26,566 10 8	12,422 14 8	18,891 5 5	10,909 3 4	1,228 3 8	1,884 8 9	1,02,092 11 5
GRAND TOTAL OF EXPENDITURE ...	28,518 10 11	43,681 9 5	72,139 12 6	31,940 5 9	49,133 6 4	29,951 7 6	3,095 1 4	3,976 10 0	2,62,436 15 9

CALCUTTA,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 50—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Account current for the year 1880-81.

Heads of account.	Rs. a. p.	Rs. a. p.	Heads of account.	Rs. a. p.	Rs. a. p.
To cash in hand on 1st April, 1880	...	28,205 6 1			
Revenue, III, Forests, as per annual summary	...	4,57,606 8 8	By expenditure as per annual summary	...	2,62,436 15 9
Service Funds.			Forest cash remittances (local) :—		
Military Fund, Bengal	189 0 0		Remittances to treasuries	4,01,978 9 2	
Military Orphan Fund, Bengal	157 8 0		Inter-divisional transfers	4,732 15 0	
Uncovenanted Service Family Pension Fund, Bengal ...	1,199 7 0	1,545 15 0			4,06,711 8 2
Forest Cash Remittances (Local).			Advances recoverable	...	49,027 1 11
Forest cheques drawn	2,52,713 6 0		*Account current (other Governments).*		
Inter-divisional transfers	4,732 15 0		Government of Panjáb	...	1,041 10 8
		2,57,446 5 0	Inter-departmental transfer :—		
Advances recoverable	...	53,740 14 2	Public Works Department (other branches)	19,168 0 2	
Permanent advance	...	1,240 0 0	Military Department, Bengal	43,801 0 11	
Inter-departmental transfers :—			Civil Department rewards for passing examination ...	360 0 0	
Public Works Department (other branches)	125 7 0		Telegraph Department	40 10 0	
Military Department, Bengal	216 5 8				63,369 11 1
Civil Departments—Mathematical Instrument Department,	241 1 0		Cash in hand on 31st March, 1881	...	17,793 15 0
Telegraph Department	13 0 0	595 13 8	Total	...	8,00,380 14 7
Total	...	8,00,380 14 7			

CALCUTTA,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller General (Forests).

FORM No. 51—(Prescribed).

Forest Department, Central Circle, North-Western Provinces and Oudh.

Statement of outstandings and liabilities on account of contractors and disbursers during 1880-81.

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payment made during year.	At close of year.	To Department (outstandings).	By Department (liabilities).	
	TRANSACTIONS DEBITED AND CREDITED TO "ADVANCES RECOVERABLE."								
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction	...	6,390 6 10	6,390 6 10	115 0 0	6,303 2 0	6,418 2 0	27 11 2	...	
Naini Tál	...	16,106 3 4	16,106 3 4	8,495 5 9	8,197 4 11	16,692 10 8	586 7 4	...	
Kumaon	...	15,762 0 0	15,762 0 0	800 0 0	18,379 12 0	19,179 12 0	3,417 12 0	...	
Ránikhet	...	...	...	...	650 0 0	650 0 0	650 0 0	...	
Garhwál	...	4,722 6 7	4,722 6 7	407 7 0	6,375 1 6	6,782 8 6	2,060 1 11	...	
Ganges	...	9,567 11 2	9,567 11 2	2,300 0 0	8,030 3 0	10,330 3 0	762 7 10	...	
Jhánsi	...	829 10 3	829 10 3	10 4 3	821 2 6	831 6 9	1 12 6	...	
Lalitpur	...	362 8 0	362 8 0	92 0 0	270 8 0	362 8 0	...	...	
Total, "Advances Recoverable"...	...	53,740 14 2	53,740 14 2	12,220 1 0	49,027 1 11	61,247 2 11	7,506 4 9	...	
	TRANSACTIONS ADJUSTED FINALLY TO SERVICE HEADS.								
Naini Tál	64 10 8	...	64 10 8	...	...	...	...	64 10 8	
Ránikhet	...	1,229 3 3	1,229 3 3	...	...	...	..	1,229 3 3	
Grand Total ...	64 10 8	54,970 1 5	55,034 12 1	12,220 1 0	49,027 1 11	61,247 2 11	7,506 4 9	1,293 13 11	

Calcutta,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 52.

Forest Department, Central Circle, North-Western Provinces.

Statement of outstandings on account of Revenue, 1880-81.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	
Direction		...	...	...	...	...	
Naini Tál		...	35,781 15 9	35,781 15 9	35,781 15 9	...	
Kumaon		735 9 9	1,85,371 4 10	1,86,106 14 7	4,86,106 14 7	...	
Ránikhet		...	37,260 5 9	37,260 5 9	36,604 7 9	655 14 0	
Garhwál		...	1,26,661 14 6	1,26,661 14 6	1,26,661 14 6	...	Includes Rs 5,804-12-3 received in advance.
Ganges		...	61,356 2 4	61,356 2 4	61,356 2 4	...	Includes Rs. 5,119-14-4 received in advance.
Jhánsi		...	3,754 12 9	3,754 12 9	3,754 12 9	...	
Lalitpur		...	8,075 14 9	8,075 14 9	8,075 14 9	...	
	Total ..	735 9 9	4,58,262 6 8	4,58,998 0 5	*4,58,342 2 5	655 14 0	Due from private individuals.

		Rs. a. p
* Amount realized as per annual summary	...	4,57,606 8 8
Amount" written off as per Government order	...	735 9 9
Total	...	4,58,342 2 5

Calcutta,
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 53—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement of trees felled during the year 1880-81.

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year.		Felled during current year.		Total.		Disposed of during current year.			Closing balance.		REMARKS.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
Naini Tál ...	Naini Tál ...	Kahla and Dubnikhal.	Chír ...	1	48	24	712	25	760	Converted into scantlings.	25	760	...	...	
		Arukhán ...	Do. ...	...	...	3	45	3	45		3	45	...	...	
		Kolona ...	Do. ...	...	...	213	3,595	213	3,595		213	3,595	...	...	
		Himan ...	Do. ...	...	...	325	19,000	325	* 19,000	Converted into logs...	325	19,000	...	...	* Approximate.
		Kolona ...	Do. ...	...	...	417	25,000	417	† 25,000		417	25,000	...	...	† Ditto.
		Ditto ...	Oak ...	...	...	6		6		Converted into fuel for Commissariat Department.	6		...	...	In addition about 25,000 cubic feet from stumps and fallen wood.
		Ditto ...	Ayar ...	...	...	135	15,000	135	15,000		135	15,000	...	...	
		Ditto ...	Rhododendron,	...	...	141		141			141		...	...	
		Ditto ...	Miscellaneous,	...	...	195		195			195		...	...	
		Dhunikhal ...	Dry chir ...	...	...	21	900	21	900		21	900	...	...	
		China ...	Oak ...	...	...	360	14,196	360	14,196		360	14,196	...	...	
			Total ...	1	48	1,840	78,448	1,841	78,496		1,841	78,496	...	...	
Ránikhet ...	Ránikhet ...	Ranikhet reserved forest.	Chír ...	...	...	223	15,606	223	15,606	Converted into fuel for Commissariat Department.	223	15,606	...	...	Converted into fuel for the Commissariat Department, with the exception of 86 pine poles used by the department and 18 pine trees carried away by floods.
			Oak ...	...	...	234	8,622	234	8,622		234	8,622	...	...	
			Other kinds ...	...	...	211	3,438	211	3,438		211	3,438	...	...	
		Ditto ...	Chír ...	...	...	4	28	4	28		4	28	...	...	
		Dwarson ...	Do. ...	...	...	81	1,455	81	1,455		81	1,455	...	...	
			Oak ...	...	...	57	1,615	57	1,615		57	1,615	...	...	
			Other kinds ...	...	...	19	255	19	255		19	255	...	...	
		Chiliano ...	Chír ...	...	...	22	1,526	22	1,526		22	1,526	...	...	
		Karchuli ...	Do. ...	...	...	6	472	6	472		6	472	...	...	
		Chaubattia ...	Do. ...	...	...	16	1,844	16	1,844		16	1,844	...	...	
		Ganiadeoli ...	Do. ...	...	...	114	3,844	114	3,844		114	3,844	...	...	
		Ditto ...	Do. ...	...	...	14	1,238	14	1,238		14	1,238	...	...	
			Total ...	...	...	1,001	39,943	1,001	39,943		1,001	39,943	...	...	
Kumaon ...	Bhabar Chilkia.	Mohan ...	Sál ...	...	...	2,046	28,675	2,046	28,675	Converted into scantlings.	2,046	28,675	...	...	
			Jaman ...	...	...	52	699	52	699		52	699	...	...	
			Chír ...	...	...	21	624	21	624		21	624	...	...	
			Katrukh ...	...	...	678	3,390	678	3,390	Left on the ground...	678	3,390	...	...	
	Khota ...	Bhandarpani Chupra.	Sál ...	...	...	723	21,817	723	21,817	Converted into logs and scantlings.	723	21,817	...	...	
		Bhalon ...	Katrukh ...	...	...	4	30	4	30		4	30	...	...	
	Bhabar Chaubainsi.	Various ...	Sál ...	...	...	200	8,000	200	8,000		200	8,000	...	...	Nawab of Rampur's annual allowances.
			Do. ...	...	...	177	531	177	531		177	531	...	...	Used up by the department.
			Katrukh ...	...	...	92	230	92	230	Exported by purchasers.	92	230	...	...	
			Total ...	...	...	3,993	63,996	3,993	63,996	...	3,993	63,996	...	...	

FORM No. 53—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement of trees felled during the year 1880-81—(concluded).

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year.		Felled during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C ft.	
Garhwál ...	Kotri Dún ...	Haldguddi ...	Sein ...	3	267	...	...	3	267	...	...	...	3	267	
		Kushamghotti,	Do. ...	3	229	159	4,273	162	4,502	Sown into karis ...	162	4,502	...	...	
		Chaulaikhet ...	Do. ...	...	...	96	3,687	96	3,687	Ditto ...	96	3,687	...	...	
		Garapani ...	Do. ...	...	...	286	4,990	286	4,990	Ditto ...	286	4,990	...	...	
		Oghion ...	Do. ...	...	...	378	5,625	378	5,625	Ditto ...	378	5,625	...	...	
		Kumrisote ...	Do. ...	...	...	295	4,969	295	4,969	Ditto ...	295	4,969	...	...	
		Gonjgarh ...	Do. ...	...	...	394	10,933	394	10,933	Ditto ...	394	10,933	...	...	
	Paíli Dún ...	Gonjera ...	Sál ...	...	...	46	1,281	46	1,281	Cut into logs ...	46	1,281	...	...	
			Total ...	6	496	1,654	35,758	1,660	36,254	...	1,657	35,987	3	267	
Ganges ...	Bhagirathi valley.	Above Hirsil...	Deodar ...	1,097	41,388	*1,901	1,36,681	2,998	1,78,069	Converted into sleepers.	2,748	1,65,920	250	12,149	* These were all dead trees.
	Gorighat ...	Jama khani ...	Kikar ...	145	502	...	...	145	502	...	145	502	...	...	Written off the stock list.
			Siras ...	450	1,860	...	...	450	1,860	...	450	1,860	...	...	
			Bel ...	300	1,102	...	...	300	1,102	...	300	1,102	...	...	
			Jaman ...	210	906	...	...	210	906	...	210	906	...	...	
			Bair ...	660	2,806	...	...	660	2,806	...	660	2,806	...	...	
			Mowa ...	500	1,685	...	...	500	1,685	...	500	1,685	...	...	
	Ditto ...	Ditto ...	Bel ...	...	...	327	1,082	327	1,082	For the Ganges canal head-works.	327	1,082	...	...	
			Bakli ...	...	...	4,896	16,630	4,896	16,630		4,896	16,630	...	...	
			Dhouri ...	...	...	1,629	5,344	1,629	5,344		1,629	5,344	...	...	
			Kamela ...	...	...	584	1,786	584	1,786		584	1,786	...	...	
			Kura ...	...	...	306	830	306	830		306	830	...	...	
			Chila ...	...	...	275	1,354	275	1,354		275	1,354	...	...	
			Aula ...	...	...	576	881	576	881		576	881	...	...	
			Dhaman ...	...	...	207	374	207	374		207	374	...	...	
			Patari ...	...	...	303	429	303	429		303	429	...	...	
			Kachnar ...	...	...	1,825	5,342	1,825	5,342		1,825	5,342	...	...	
			Amaltas ...	...	...	2,320	6,735	2,320	6,735		2,320	6,735	...	...	
			Jhijora ...	...	...	142	408	142	408		142	408	...	...	
			Kharpat ...	...	...	205	573	205	573		205	573	...	...	
	Ditto ...	Suni sote ...	Kokat ...	...	...	170	8,038	170	8,038	Sawn into karis,	170	80.38	...	...	
			Sein ...	...	...	830	16,134	830	16,134		830	16,134	...	...	
			Box ...	...	...	121	221	121	221	Sent to Messrs. Churchill and Sim, London.	121	221	...	...	
			Total ...	3,362	50,249	16,617	2,02,342	19,979	2,52,591	...	19,729	2,47,442	250	12,149	

Jhánsi ...	Babina ...	Babina ...	Kardhai ...	...	...	806	2,424	806	2,424	Converted into ballis.	806	2,424	...	...	
		Ditto ...	Teak ...	299	897	...	...	299	897	Ditto ...	299	897	...	...	13 written off the stock list.
			Total ...	299	897	806	2,424	1,105	3,321	...	1,105	3,321	...	...	
Lalitpur ...	Bansi ...	Haraspur ...	Bel ...	...	...	200	1,926	200	1,926	Converted into ballis.	200	1,926	...	...	
	Balabahat ...	Jamonian ...	Tendu ...	...	...	15	77	15	77	...	15	77	...	...	
		Deogarh ...	Seja ...	...	...	839	1,250	839	1,250	...	839	1,250	...	...	
	Talbehat ...	Karesra ...	Tendu ...	...	...	44	48	44	48	...	44	48	...	...	
		Birdha ...	Seja ...	...	...	120	180	120	180	...	120	180	...	...	
	Lalitpur ...	Serwans ...	Teak ...	...	...	25	36	25	36	...	25	36	...	...	
		Ditto ...	Do. ...	...	...	71	212	71	212	...	71	212	...	...	
	Maraura ...	Dhori Sagar ...	Tendu ...	...	...	321	339	321	339	...	321	339	...	...	
		Sourai ...	Seja ...	...	...	737	750	737	750	...	737	750	...	...	
			Total ...	...	...	2,372	4,818	2,372	4,818		2,372	4,818	...	...	
			GRAND TOTAL...	3,668	51,690	28,283	4,27,729	31,951	4,79,419		31,698	4,67,003	253	12,416	

ABSTRACT OF TREES FELLED DURING THE YEAR.

	Mature.		Poles.					
Sal ...	...	...	3,192	...	3,015	...	177	... ...
Chir ...	...	...	1,504	...	1,271	...	233	... ...
Sein ...	...	...	2,438	...	2,438	...	...	... ...
Teak ...	...	...	96	...	96	...	...	... ...
Deodar ...	...	...	1,901	...	†1,901	...	...	... ...
Box ...	...	...	121	...	121	...	...	... ...
Oak ...	...	...	657	...	619	...	38	... ...
Miscellaneous,	...	...	18,374	..	1,664	...	16,710	... ...
Total ...	...	...	28,283	...	11,125	...	17,158	... ...

†All dead trees.

NAINI TÁL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 54—(Suggested).

Forest Department, Central Circle, North-Western Provinces and Oudh.

Statement of logs sleepers, and other scantlings cut and exported during the year 1880-81

Division.	Forest range.	Locality.	Description of timber and scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
Naini Tál ...	Naini Tál ...	Hinan ...	Chír logs ...	...	...	1,703	*19,000	1,703	19,000	Converted into scantlings.	865	9,498	838	9,502	*Approximate.
		Various ...	Do. karis ...	5,399	12,557	4,354	7,021	10,253	19,578	Carried to depôt ...	7,610	15,688	2,643	3,890	
			Do. planks ...	10,985	7,745	16,041	6,877	26,097	14,622	Ditto ...	23,883	13,368	2,144	1,254	
			Hard fuel ...	...	...	19,326	mds.	19,326	mds.	Ditto ...	13,411	mds	5,915	mds.	
			Chír do. ...	...	...	20,223	mds.	20,223	mds	Ditto ...	20,223	mds.	...	mds.	
			Pieces ...	16,685	20,302	21,098	32 898	37,983	53,200	...	32,358	38,554	5,625	14,646	
			Maunds ...	...	...	39,549	mds.	39,549	mds.	...	33,634	mds.	5,915	mds.	
Ránikhet ...	Ránikhet ...	Ditto ...	Firewood ...	†24,668	mds.	67,859	mds.	92,527	mds.	Carried to depôt ...	92,332	...	...	...	†The Ránikhet Divisional Officer has corrected the balance from 27,531 maunds to 24,668 maunds, *vide* Ránikhet Form No. 54, for 1880-81.
										Lost by flood ...	195				
											92,527	mds.			
			Poles ...	...	...	86	1,548	86	1,548	Used by department	86	1,548	...	...	
			Firewood ...	24,668	mds.	67,859	mds.	92,527	mds.	...	92,527	mds.	...	...	
			Pieces ...	...	...	86	1,548	86	1,548	...	86	1,548	...	...	
Kumaon ...	Bhabar forests,	Ditto ...	Sál logs ...	51	2,383	379	18,543	430	20 926	Carried to depôt ...	424	20 632	6	294	
			Do. karis and joras.	9,208	14,762	19,747	32,435	28,955	47,197	Ditto ...	23,973	39,121	4,982	8,076	
			Do. sleepers ...	6	20	...	...	6	20	Ditto ...	6	20	...	...	
			Do. planks ...	...	...	110	69	110	69	Ditto ...	110	69	...	...	
			Haldu karis and planks.	...	...	644	506	644	506	Ditto ...	436	321	208	185	
			Jaman karis ...	77	125	443	699	520	824	Ditto ...	250	491	265	415	
			Kukat do. ...	...	...	53	85	53	85	Left in forest ...	5	8			
										Carried to depôt ...	23	38	30	47	
			Chír do. ...	206	343	389	633	595	976	Ditto ...	595	976	...	...	
			...	9,548	17.633	21,765	52,970	31,313	70,603	...	25.822	61,586	5,491	9,017	
Garhwál ...	Kotri Dún ...	Ditto ...	Sein karis ...	803	1,085	19,980	34,707	20,783	35,792	Carried to depôt ...	9,983	17,190	10,471	18,159	
										Washed away by flood.	329	443			
											10,312	17,633			
	Patli Dún ...	Gonjera ...	Sál logs ...	...	...	46	1,281	46	1,281	...	...	...	46	1,281	
			Total ...	803	1,085	20,026	35,988	20,829	37,073	...	10,312	17,633	10,517	19,440	

	Bhagirathi valley.	Above Haril ...	Deodar sleepers,	...	...	1,24,440	1,65,920	1,24,440	1,65,920	Carried to depôt ...	...	...	1,24,440	1,65,920
Ganges ...	Bhabar forests,	Various ...	Kukat karis ...	...	...	1,591	2,576	1,591	2,576	Ditto ...	734	1,249	857	1,327
			Do. ballas...	...	...	1,176	9,788	1,176	9,788	Ditto ...	1,176	9,788	...	...
			Do. tors ...	...	...	12,389	23,634	12,389	23,634	Ditto ...	8,589	18,172	3,800	5,462
			Do. ballis ...	...	...	4,278	13,463	4,278	13,463	Ditto ...	4,278	13,463	...	...
			Sein karis ...	...	...	10,647	16,134	10,647	16,134	Ditto ...	4,529	6,913	6,118	9,221
				...	...	1,54,521	2,31,515	1,54,521	2,31,515	...	19,306	49,585	1,35,215	1,81,930
Jhánsi ...	Jhánsi ditto...	Babina ...	Ballis ...	299	897	806	2,418	1,105	3,315	Carried to depôt ...	806	2,418	...	...
										Written off ...	13	39	...	...
										Sold ...	286	858	...	...
											1,105	3,315	...	...
Lalitpur ...	Lalitpur ditto...	Various ...	Bel ballis ...	...	...	800	1,926	800	1,926	Carried to depôt ...	800	1,926	...	...
			Tendu do. ...	...	...	420	464	420	464	Ditto ...	420	464	...	...
			Teak do. ...	...	...	96	248	96	248	Ditto ...	96	248	...	...
			Seju do. ...	...	...	1,696	2,180	1,696	2,180	Ditto ...	1,187	1,323	509	857
				...	...	3,012	4,818	3,012	4,818	...	2,503	3,961	509	857
		Total ...	Timber pieces	27,535	39,917	2,21,314	3,62,155	2,48,849	4,02,072	...	91,492	1,76,182	1,57,357	2,25,890
			Fuel mds. ...	24,668	...	1,07,408	...	1,32,076	...	...	1,26,161	...	5,915	
			Summary.											
			Deodar sleepers,	...	...	1,24,440	1,65,920							
			Sál karis, &c.	...	...	20,282	52,328							
			Sein do. ...	...	...	30,627	50,841							
			Chír do. ...	...	...	21,487	33,531							
			Jaman do. ...	...	...	443	699							
			Haldu do. ...	...	...	644	506							
			Other kinds ...	...	...	23,391	58,330							
			Fuel mds. ...	...	...	1,07,408	...							
		Total ...	Timber pieces,	...	...	2,21,314	3,62,155							
			Fuel mds. ...	...	...	1,07,408	...							

NAINI TAL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N-W. P. and Oudh.

FORM No. 55—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement of timber and other produce brought to depôt from the different Forest Divisions, 1880-81.

Division.	Forest.	Description of timber, &c.	Number of		Total of each division.	
			Pieces.	Cubic feet.	Pieces.	Cubic feet.
Kumaun ...	Bhabar forests,	Sál logs ...	424	20,632		
		Do. karis ...	23,331	37,655		
		Do. sleepers ...	6	20		
		Do. other kinds ...	762	1,544		
		Haldu karis ...	103	163		
		Do. planks ...	333	158		
		Jaman karis ...	250	401		
		Chír do. ...	595	973		
		Kukat do. ...	23	37	25,827	61,583
Naini Tal ...	Various ...	Chír karis ...	7,610	15,782		
		Do. planks ...	23,883	13,406	31,493	29,188
		Firewood mds. ...	33,634	...		
		Charcoal " ...	17,073	...	50,707	
		Lime " ...	6	...	6	
Ramikhet ...	Ditto ...	Firewood " ...	92,331	...	92,331	
Garhwál ...	Kotri Dún ...	Sal, other kinds ...	*53	178		
		Sein karis ...	9,983	17,190	10,036	17,368
Ganges ...	Various ...	Ditto ...	4,529	6,913		
		Kukat karis ...	734	1,249		
		Do. ballis, ballas, and tors.	14,043	41,423	19,306	49,585
Jhánsi ...	Ditto ...	Ballis ...	806	2,418	806	2,418
		Bamboos ...	4,599	...	4,599	
		Kiras ...	3,712	...		
		Kurias ...	40,895	...	44,607	
		Firewood mds. ...	2,566	...		
		Charcoal " ...	1,144	...	3,710	
Lalitpur ...	Ditto ...	Ballis ...	2,503	3,961	2,503	3,961
		Bamboos ...	3,33,040	...	3,33,040	
	GRAND TOTAL...	Timber ...	...	...	89,971	1,64,103
		Bamboos ...	...	...	3,37,639	
		Kiras and kurias ...	...	...	44,607	
		Firewood and charcoal Mds.	...	...	1,46,748	
		Lime " ...	...	...	6	

* Surplus from timber shed work.

NAINI TAL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 56—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account of timber and other produce, 1880-81.

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Balance in hand at commencement of year.					
Kumaon Division	Sál logs ...	95	4,352		
	Do. karis ...	12,558	18,498		
	Do. sleepers ...	56	196		
	Do. other kinds ...	6	282		
	Haldu, all kinds ...	2	2		
	Timber, all other kinds ...	1,634	2,628	14,361	25,958
Naini Tál Ditto ...	Lime mds.	8	...	8	
Ránikhet Ditto ...	Firewood "	...	...		
Garhwál Ditto	Sál karis ...	18,578	26,842		
	Do. other kinds ...	25	204	18,603	27,046
Ganges Ditto ...	Timber ...	...	...		
Jhánsi Ditto...	Ballis ...	301	903	301	903
	Bamboos ...	1,833	...	1,833	
	Baskets ...	783	...	783	
	Kiras ...	2,517	...		
	Kurias ...	6,255	...	8,772	
	Firewood mds.	723	...		
	Charcoal "	316	...	1,039	
	Grass bdls.	23,692	...	23,692	

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Removed by purchasers.					
Kumaun Division	Sál logs ...	204	9,133		
	Do. karis ...	26,437	40,901		
	Do. sleepers ...	62	216		
	Do. other kinds ...	766	1,823		
	Haldu, all kinds ...	2	2		
	Timber, all other kinds ...	2,262	3,657	29,733	55,732
Naini Tál Ditto	Chír karis ...	3,323	6,214		
	Do. planks ...	20,119	10,967	23,442	17,181
	Firewood mds.	33,634	...		
	Charcoal "	9,967	...	43,601	
	Lime "	6	...	6	
Ránikhet Ditto	Firewood "	91,235	...	91,235	
Garhwál Ditto	Sál karis ...	18,560	26,773		
	Do. other kinds ...	54	184		
	Sein karis ...	3,939	6,020	22,553	32,977
Ganges Ditto ...	Sein karis ...	2,388	3,576		
	Kukat do. ...	570	955		
	Timber, other kinds ...	14,043	41,423	17,001	45,954
Jhánsi Ditto ...	Ballis ...	678	2,034	678	2,034
	Bamboos ...	3,228	...	3,228	
	Baskets ...	689	...	689	
	Kiras ...	5,589	...		
	Kurias ...	27,285	...	32,874	
	Firewood mds.	1,975	...		
	Charcoal "	984	...	2,959	

FORM No. 56.

Forest Department, North-Western Provinces and Oudh.

Account of timber and other produce, 1880-81—(concluded).

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Balance in hand at commencement of year—(concluded).					
Lalitpur Division, ...	Bamboos ...	9,163	...	9,163	
Total ...	Timber ...	...	...	33,265	53,907
	Bamboos ...	...	...	10,996	
	Baskets ...	...	...	783	
	Kiras and kurias ...	...	...	8,772	
	Firewood and charcoal mds.	...	...	1,039	
	Lime ...	...	...	8	
	Grass ...	...	...	23,692	
Received during the year.					
Kumaon Division,	Sál logs ...	424	20,632		
	Do. karis ...	23,331	37,655		
	Do. sleepers ...	6	20		
	Do., bdls. other kinds ...	762	1,544		
	Haldu, all kinds ...	436	321		
	Timber, all other kinds ...	868	1,411	25,827	61,583
Naini Tál ditto ...	Chír karis ...	7,610	15,782		
	Do. planks ...	23,883	13,406	31,493	29,188
	Firewood mds.	33,634	...		
	Charcoal "	17,073	...	50,707	
	Lime "	6	...	6	
Ránikhet ditto ...	Firewood mds.	92,331	...	92,331	
Garhwál ditto ...	Sál, other kinds ...	53	178		
	Sein karis ...	9,983	17,190	10,036	17,368

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Removed by purchasers—(concluded).					
Lalitpur Division,	Ballis ...	2,317	3,679	2,317	3,679
	Bamboos ...	334,497	...	3,34,497	
Total ...	Timber ...	...	...	95,724	1,57,557
	Bamboos ...	...	...	3,37,725	
	Baskets ...	...	...	689	
	Kiras and kurias ...	...	...	32,874	
	Firewood and charcoal mds.	...	...	1,37,795	
	Lime "	...	...	6	
Lost or used by the department.					
Kumaun Division...	Sál logs (lost in sawing at depôt).	...	6	...	6
Naini Tál ditto...	Chír karis ...	247	694	1,652	1,074
	Do. planks ...	1,405	380		
	Lime mds.	8	...	8	
Jhánsi ditto...	Ballis ...	13	39	13	39
	Firewood mds.	114	...	130	
	Charcoal "	16	...		
	Grass bdls.	23,692	...	23,692	
Total ...	Timber	...	...	1,665	1,119
	Firewood and charcoal mds.	...	...	130	
	Lime "	...	...	8	
	Grass bdls.	...	...	23,692	
Otherwise removed from the depôt.					
Kumaun Division,	Sál logs (sawn into karis)	...	19	...	19
Garhwál ditto ...	Sál karis ...	18	69	42	267
	Do., other kinds ...	24	198		
	Total, Timbers ...	...	...	42	286

Ganges ditto ...	Sein karis ...	4,529	6,913		
	Kukat do. ...	734	1,249		
	Timber, all other kinds ...	14,043	41,423	19,306	49,585
Jhánsi ditto ...	Ballis ...	806	2,418	806	2,418
	Bamboos ...	4,599	...	4,599	
	Baskets ...	...	...		
	Kiras ...	3,712	...		
	Kurias ...	4,0895	...	44,607	
	Firewood mds.	2,566	...		
	Charcoal "	1,144	...	3,710	
Lalitpur ditto ...	Ballis ...	2,503	3,961	2,503	3,961
	Bamboos ...	3,33,040	..	3,33,040	
Total ...	Timber ...	...	...	89,971	164,103
	Bamboos ...	...	...	3,37,639	
	Baskets ...	...	...	...	
	Kiras and kurias ...	...	...	44,,607	
	Firewood and charcoal mds.	...	...	1,46,748	
	Lime "	...	...	6	
Grand Total ...	Timber ...	...	...	1,23,236	2,18,010
	Bamboos ...	...	...	3,48,635	
	Baskets ...	...	...	783	
	Kiras and kurias ...	...	...	53,379	
	Firewood and charcoal mds.	...	...	1,47,787	
	Lime "	...	...	14	
	Grass bdls.	...	...	23,692	

Balance in hand at close of year.

Kumaun Division,	Sál logs ...	315	15,826		
	Do. karis ...	9,462	15,252		
	Do. sleepers ...	...	...		
	Do., other kinds ...	2	3		
	Haldu, all kinds ...	436	321		
	Timber, all other kinds ...	240	382	10,455	31,784
Naini Tál ditto ...	Chír karis ...	4,040	874		
	Do. planks ...	2,359	2,059		
	Charcoal mds.	7,106	...	6,399	10,933
Ránikhet ditto ...	Firewood "	1,096	...	7,106	
Garhwál ditto ...	Sein karis ...	6,044	11,170	1,096	
Ganges ditto ...	Sein karis ...	2,141	3,337	6,044	11,170
	Kukat do. ...	164	294	2,305	3,631
Jhánsi ditto ...	Ballis ...	416	1,248	416	1,248
	Bamboos ...	3,204	...	3,204	
	Baskets ...	94	...	94	
	Kiras ...	640	...		
	Kurias ...	19,865	...	20,505	
	Firewood mds.	1,200	...		
	Charcoal "	460	...	1,660	
Lalitpur ditto ...	Ballis ...	186	282	186	282
	Bamboos ...	7,706	...	7,706	
Total ...	Timber ...	...	...	25,805	59,048
	Bamboos ...	...	...	10,910	
	Baskets ...	...	...	94	
	Kiras and kurias ...	...	...	20,505	
	Firewood and charcoal mds.	...	...	9,862	
Grand Total ...	Timber ...	...	...	1,23,236	2,18,010
	Bamboos ...	...	...	3,48,635	
	Baskets ...	...	...	783	
	Kiras and kurias ...	...	...	53,379	
	Firewood and charcoal mds.	...	...	1,47,787	
	Lime "	...	...	14	
	Grass bdls.	...	...	23,692	

NAINI TÁL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 57—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement showing the amount realized on account of the different classes of timber and other produce sold during 1880-81.

Division.	Description of timber, &c.	Number of pieces, &c., sold.	Cubic contents.	Amount realized and due on account of sales.	Average amount per log, &c.	Average cubical contents of logs.	Average amount per cubic foot.	REMARKS.
				Rs.	Rs. a. p.	′ ″ ‴	Rs. a. p.	
Naini Tál.	Chir karis and planks ...	23,442	17,102	10,427	0 7 1	0 8 9	0 9 9	
	Charcoal mds.	9,966	...	9,951	1 0 0	...	...	Per maund.
	Firewood "	33,634	...	12,781	0 6 0	...	...	Ditto.
	Lime "	6	...	3	0 8 0	...	...	Ditto.
	Total ... pieces	23,442	17,102	33,162	...	...	...	
	Total ... mds.	43,606	...					
Ránikhet	Firewood mds.	91,236	...	31,020	0 5 5	...	...	Ditto.
Kumaon.	Sál logs ...	204	9,133	14,966	73 5 9	44 9 2	1 10 2	
	Do. karis ...	26,437	40,901	53,216	2 0 2	1 6 6	1 4 9	
	Do. sleepers ...	62	216	283	4 9 0	3 5 9	1 4 11	
	Do., other kinds ...	766	1,823	4,566	5 15 4	2 4 6	2 8 1	
	Haldu, all kinds ...	2	2	1	0 8 0	1 0 0	0 8 0	
	Timber, all other kinds ...	2,262	3,657	2,267	1 0 0	1 7 4	0 9 11	
	Total ...	29,733	55,732	75,299	2 8 6	1 10 6	1 5 7	
Garhwál.	Sál karis ...	18,560	26,773	29,839	1 9 9	1 4 4	1 1 9	
	Do., other kinds ...	54	184	162	3 0 0	3 4 11	0 14 0	
	Sein karis ...	3,939	6,020	3,898	0 15 10	1 6 4	0 10 4	
	Total ...	22,553	32,977	33,899	1 8 0	1 5 6	1 0 5	
Ganges.	Sein karis ...	2,388	3,576	2,682	1 2 0	1 5 11	0 12 0	
	Kukat do. ...	570	955	298	0 8 4	1 8 1	0 5 0	
	Ballas, ballis, and tors ...	14,043	41,423	6,472	0 7 4	2 11 5	0 2 6	
	Total ...	17,001	45,954	9,452	0 8 11	2 8 5	0 3 3	
Jhánsi.	Ballis ...	678	2,034	68	0 1 7	3 0 0	0 0 6	
	Bamboos ...	3,228	...	39	0 0 2	...	...	Per each.
	Firewood mds.	1,975	...	310	0 2 6	...	...	Per maund.
	Charcoal "	984	...	403	0 6 7	...	...	Ditto
	Kiras ...	5,589	...	349	0 1 0	...	...	Per each.
	Kurias ...	27,285	...	109	0 0 1	...	...	Ditto.
	Bamboo baskets ...	34	...	2	0 0 10	...	...	Ditto.
	Siari ditto ...	655	...	17	0 0 5	...	...	Ditto.
	Total ... Pieces	36,780	2,034	1,297	...	...	...	
	Total ... Mds.	2,959	...					
	Total ... Baskets	689	...					
Lalitpur.	Ballis ...	2,317	3,679	287	0 1 11	1 7 0	0 1 3	
	Bamboos ...	334,497	...	1,722	0 0 1	...	...	Per each.
	Total ...	336,814	3,679	2,009	...	...	...	
	Summary.							
	Timber ...	95,724	157,478	1,29,432	1 5 8	1 7 9	0 13 2	
	Firewood mds.	137,791	...	54,465	0 6 4	...	...	Per maund.
	Bamboos ...	337,725	...	1,761	0 0 1	...	...	Per bamboo.
	Kiras and kurias ...	32,874	...	458	0 0 3	...	...	Per each.
	Baskets ...	689	...	19	0 0 5	...	...	Ditto.
	Lime mds.	6	...	3	0 8 0	...	...	Per maund.
	Total ...	...	...	1,86,138	...	...	...	

DEDUCT—Amount due but not realized during the year ...	...
Balance ...	1,86,138
ADD—Amount received in advance from timber merchants, *vide* Form No. 52.	10,925
Total shown as revenue on account of sale under Budget head I.	1,97,063

NAINI TÁL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 58—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement showing the amount expended on the different classes of timber and other produce brought to depôt during the year 1880-81.

Division or depôt.	Particulars of timber, &c.	Number of: Pieces.	Number of: Cubic contents.	Expenditure: Timber expenses under A.I.	Expenditure: Quota of all other expenditure chargeable against timber, &c.	Expenditure: Total amount chargeable against timber, &c.	Average: Amount per piece.	Average: Cubic contents per piece.	Average: Amount per cubic foot.	REMARKS.
				Rs. a p.	Rs. a, p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	
Kumaon ...	Sál logs	424	20,632	...	...	...	...	...	...	
	Do. karis	23,331	37,655	...	...	...	...	...	...	
	Do. wood of other kinds ...	768	1,564	...	...	...	...	...	...	
	Haldu, all kinds ...	436	321	...	...	...	...	...	...	
	Timber, all other kinds ...	868	1 411	...	...	...	...	...	...	
	Total ...	25.827	61,583	16,942 0 0	17,219 0 0	34,161 0 0	1 5 2	2 4 7	0 8 10	
Naini Tal ...	Chir karis	7,610	15,782	8,076 0 0	1,032 0 0	9,108 0 0	0 4 7	0 11 1	0 4 11	
	Do. planks	23,883	13,406							
	Firewood ... mds.	33,634	...	20,538 0 0	4,131 0 0	24,669 0 0	...	...	0 7 9	Per maund.
	Charcoal ... "	17,073	...							
	Lime ... "	6	...							
	Total "	31,493 50,713	29,188 ...	28,614 0 0	5,163 0 0	33,777 0 0	...	...	...	
Ránikhet ...	Firewood ... "	92,331	...	16,413 0 0	4,944 0 0	21,357 0 0	...	...	0 3 8	Ditto.
Garhwál ...	Sein karis	9,983	17,191	* 6,558 0 0	13,418 0 0	19,976 0 0	1 15 3	1 8 10	1 2 7	* Includes the cost of sowing 6,052 karis more which are still in the forest.
Ganges ...	Do. karis	4,529	6,913	...	...	...	...	...	...	
	Kukat do.	734	1,249	...	...	...	...	...	...	
	Timber, all other kinds ...	14,043	41,423	...	...	...	...	...	...	
	Total ...	19,306	49,585	8,289 0 0	10,089 0 0	81,378 0 0	0 15 2	2 6 10	0 5 11	
Jhánsi ...	Ballis	806	2,418	12 0 0	12 0 0	24 0 0	0 0 5	3 0 0	0 0 1	
	Bamboos	4,599	...	6 0 0	6 0 0	12 0 0	...	...	0 4 2	Per 100.
	Kiras	3,712	...	222 0 0	200 0 0	422 0 0	...	...	1 5 10	Ditto.
	Kurias	40,895	...	85 0 0	76 0 0	161 0 0	...	...	0 6 3	Ditto.
	Firewood ... mds.	2,566	...	172 0 0	164 0 0	336 0 0	...	...	0 2 1	Per maund.
	Charcoal ... "	1,144	...	203 0 0	200 0 0	403 0 0	...	...	0 5 7	Ditto.
	Total ...	Various.	2,418	700 0 0	658 0 0	1,358 0 0	...	...	...	
Lalitpur ...	Ballis	2,503	3,961	10 0 0	40 0 0	50 0 0	0 0 3	1 7 0	0 0 3	
	Bamboos	3,33,040	...	429 0 0	1,181 0 0	1,610 0 0	...	...	0 7 8	Per 100.
	Total ...	2,503 3,33,040	3,961	439 0 0	1,221 0 0	1,660 0 0	...	...	...	
				Summary of above.						
All Divisions ...	Timber	89,918	1,63,925	39,887 0 0	41,810 0 0	81,697 0 0	Averages are given above.			
	Bamboos	3,37,639	...	435 0 0	1,187 0 0	1,622 0 0				
	Kiras and kurias ...	44,607	...	307 0 0	276 0 0	583 0 0				
	Firewood, charcoal and lime,	Mds. 1,46,754	...	37,326 0 0	9,439 0 0	46,765 0 0				
	GRAND TOTAL ...	Various.	1,63,925	77,955 0 0	52,712 0 0	1,30,667 0 0				

NAINI TÁL,
The 8th July, 1881.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 59—(Suggested).

Forest Department, Central Circle, North-Western Provinces and Oudh.

Statement showing the revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1880-81.

Name of department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost of Forest Department. Timber expenses under A.I.	Cost of Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost of Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.	Remarks.
			Rs. a. p.		Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		
Commissariat Department, Naini Tál.	Firewood mds.	33,634	38 0 0	100 maunds,	12,781 0 0	12,781 0 0	...	8,346 0 0	2,508 0 0	10,854 0 0	1,927 0 0	...	
Commissariat Department, Ránikhet.	Ditto "	91,235	34 0 0	"	31,020 0 0	31,020 0 0	...	16,413 0 0	4,944 0 0	21,357 0 0	9,663 0 9	...	
Public Works Department, Provincial Works, Kumaon Division.	Sál logs ...	2=148′	2 0 0	Cubic foot	297 0 0	297 0 0	...	84 0 0	49 0 0	133 0 0	397 0 0	...	
	Do. karis ...	93=155′	1 8 0	"	233 0 0	233 0 0	...						
	Chír planks ...	100—10×12×1	45 0 0	100 pieces	45 0 0	45 0 0	...						
	Ditto ...	30—10×12×1½	75 0 0	"	22 0 0	22 0 0	...						
	Ditto ...	295—10×6×1	25 0 0	"	74 0 0	74 0 0	...						
	Ditto ...	100—10×6×1½	35 0 0	"	35 0 0	35 0 0	...						
	Ditto ...	20—12×12×2	1 4 0	Each ...	25 0 0	25 0 0	...						
	Chír karis ...	13—16×5×3	0 15 0	"	12 0 0	12 0 0	...						
	Ditto ...	13—14×5×3	0 12 0	"	10 0 0	10 0 0	...						
	Ditto ...	4—8×6×3	0 8 0	"	2 0 0	2 0 0	...						
	Ditto ...	6—12×6×4	1 0 0	"	6 0 0	6 0 0	...						
	Ditto ...	11—12×4×4	0 11 0	"	8 0 0	8 0 0	...	184 0 0	58 0 0	242 0 0	141 0 0	...	
	Ditto ...	8—12×5×3	0 10 0	"	5 0 0	5 0 0	...						
	Ditto ...	18—14×7×4½	1 10 0	"	29 0 0	29 0 0	...						
	Ditto ...	4—12×4×3	0 8 0	"	2 0 0	2 0 0	...						
	Ditto ...	4—16×10×7	5 0 0	"	20 0 0	20 0 0	...						
	Ditto ...	2—16×9×3	1 14 0	"	4 0 0	4 0 0	...						
	Ditto ...	4—6×10×3	0 10 0	"	2 0 0	2 0 0	...						
Public Works Department, Military Works, Naini Tál Sub-division.	Ditto ...	1—18×10×7	5 0 0	"	5 0 0	5 0 0	...						
	Chír planks ...	5—24×12×2	3 8 0	"	17 0 0	17 0 0	...						
	Ditto ...	10—16×12×2	1 14 0	"	19 0 0	19 0 0	...						
Telegraph Department, Oudh and Rohilkhand Division.	Chír karis ...	50—12×5×4	0 13 0	"	41 0 0	41 0 0	...						
Canal Foundry and Workshops, Roorkee.	Sál logs ...	19=974′	2 6 0	Cubic foot,	2,313 0 0	2,313 0 0	...	730 0 0	428 0 0	1,158 0 0	2,546 0 0	...	
	Ditto ...	10=433′	2 0 0	"	866 0 0	866 0 0	...						
	Ditto ...	3=118′	2 2 0	"	252 0 0	252 0 0	...						
	Sál kolus ...	4=182′	1 8 0	"	273 0 0	273 0 0	...						
Northern Division, Ganges Canal.	Kukat ballas ...	327=2,866′	40 0 0	Score ...	654 0 0	654 0 0	...	266 0 0	168 0 0	3,804 0 0	2,668 0 0	...	
	Ditto ...	849=6,922′	36 0 0	"	1,528 0 0	1,528 0 0	...	621 0 0					
	Kukat tors ...	8,589=18,172′	7 0 0	"	3,006 0 0	3,006 0 0	...	2,094 0 0					
	" ballis ...	4,278=13,463′	6 0 0	"	1,284 0 0	1,284 0 0	...	655 0 0					
	Total ...	...	...	...	54,890 0 0	54,890 0 0	...	29,393 0 0	8,155 0 0	37,548 0 0	17,342 0 0	...	
									Deduct surplus (or deficit) ...		...	...	
									Balance for the Department ...		17,342 0 0	...	

Naini Tál:
The 8th July, 1881.

G. GRFIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 60—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Abstract showing the value of timber and of live and dead stock for the year 1880-81.

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value	No.	Value.	No.	Value.	
		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a p.		Rs. a. p.	
Direction Division.											
Buildings ...	2	10,000 0 0	...	...	2	10,000 0 0	...	...	2	10,000 0 0	
Stores, tools and plant...	47	615 0 0	1	34 0 0	48	649 0 0	*1	34 0 0	†47	615 0 0	* Includes two tents.
Total ...	49	10,615 0 0	1	34 0 0	50	10,649 0 0	1	34 0 0	49	10,615 0 0	† A chromograph, worn out.
Kumaon Division.											
Sál logs ...	95	7,605 0 0	424	36,106 0 0	519	43,711 0 0	204	14,966 0 0	315	28,745 0 0	
Do. karis ...	12,568	17,929 0 0	23,331	47,069 0 0	35,899	64,998 0 0	26,437	53,216 0 0	9,462	11,782 0 0	
Do. sleepers ...	56	258 0 0	6	25 0 0	62	283 0 0	62	283 0 0	...	...	
Do. other kinds ...	6	300 0 0	762	4,270 0 0	768	4,570 0 0	766	4,565 0 0	2	5 0 0	
Haldu, all kinds ...	2	0 0	436	160 0 0	438	160 0 0	2	1 0 0	436	159 0 0	
Timber, all other kinds,	1,634	658 0 0	868	1,801 0 0	2,502	2,459 0 0	2,262	2,268 0 0	240	191 0 0	
Total ...	14,361	26,750 0 0	25,827	89,431 0 0	40,188	1,16,181 0 0	29,733	75,299 0 0	10,455	40,882 0 0	
Buildings ...	16	11,599 0 0	...	...	16	11,599 0 0	...	...	16	11,599 0 0	
Elephants ...	4	8,500 0 0	...	...	4	8,500 0 0	...	...	4	8,500 0 0	
Tools and plant ...	4,267	5,748 0 0	297	308 0 0	4,564	6,056 0 0	‡613	590 0 0	3,951	5,466 0 0	‡ 56 tools lost and price recovered. 557 tools broken and converted into 297 new ones.
Total ...	18,648	52,597 0 0	26,124	89,739 0 0	44,772	1,42,336 0 0	30,346	75,889 0 0	14 426	66,447 0 0	
Naini Tál Division.											
Tools and plant ...	7,751	1,275 0 0	65	159 0 0	7,816	1,434 0 8	42	239 0 0	7,774	1,195 0 0	
Buildings ...	2	255 0 0	3	4,990 0 0	5	5,245 0 0		...	5	5,245 0 0	
	7,753	1,530 0 0	68	5,149 0 0	7,821	6,679 0 0	42	239 0 0	7,779	6,440 0 0	
Chír karis ...	5,899	11,240 0 0	4,354	8,230 0 0	10,253	19,470 0 0	§ 3,570	10,427 0 0	6,683	9,043 0 0	
Do. planks ...	10,986		15,041		26,027		‖21,524		4,503		§ Includes 247 used by Department.
Total ...	16,885	11,240 0 0	19,395	8,230 0 0	36,280	19 470 0 0	25,094	10,427 0 0	11,186	9,043 0 0	‖ Ditto 1,405 ditto.
Charcoal ...	...	...	mds. 17,073	17,073 0 0	mds. 17,073	17,073 0 0	mds. 9,967	9,951 0 0	mds. 7,106	7,106 0 0	
Firewood ...	...	...	mds. 6,915	2,242 0 0	5,915	2,242 0 0	...	...	„ 5,915	2,242 0 0	
Commissariat ...	...	...	33,634	12,781 0 0	33,634	12,781 0 0	33,634	12,781 0 0	...	...	
	...	...	39,549	15,023 0 0	39,549	15,023 0 0	33,634	12,781 0 0	5,915	2,242 0 0	

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	Rs.	a.	p.
2 phauras lost ...	2	8	0
1 English pick ...	1	8	0
166 Tapes used up ...	5	8	0
6 sledge hammers,	20	0	0
Outer fly tent rotten ...	60	0	0
4 Cross-cut saws broken ...	60	0	0
Depreciation saws,	30	0	0
Ditto bags,	30	0	0
Ditto tools,	29	8	0

28 wood tickets lost by Jhampanis

Fines credited in accounts.

FORM No. 60.

Forest Department, Central Circle, North-Western Provinces and Oudh.

Abstract showing the value of timber and of live and dead stock for the year 1880-81—(concluded).

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	
		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	
Ránikhet Division.											
Buildings ...	12	4,179 0 0	...	...	12	4,179 0 0	...	...	12	4,179 0 0	*Lost.
Tools and plant ...	6,260	2,148 0 0	90	90 0 0	6,350	2,238 0 0	*2	2 0 0	6,348	2,236 0 0	
Firewood ...	mds. 24,667	4,532 0 0	mds. 67,859	26,926 0 0	mds 92,526	31,458 0 0	Mds. *91,430	31,086 0 0	mds. 1,096	372 0 0	
Total ...	6,272 and mds. 24,667	10,859 0 0	90 and mds. 67,859	27,016 0 0	6,362 and mds. 92,526	37,875 0 0	2 mds. 91,430	31,088 0 0	6,360 and mds. 1,096	6,787 0 0	
Garhwál Division.											
Sál karis ...	18,578	27,158 0 0	...	2,681 0 0	18,578	29,839 0 0	18,578	29,839 0 0	...	...	
Do. other kinds ...	25	7 0 0	53	162 0 0	78	169 0 0	78	169 0 0	...	...	
Timber, other kinds ...	...	...	9,983	9,670 0 0	9,983	9,670 0 0	3,939	3,898 0 0	6,044	5,772 0 0	
Total ...	18,603	27,165 0 0	10,036	12,513 0 0	28,639	39,678 0 0	22,595	33,906 0 0	6,044	5,772 0 0	
Elephants ...	3	3,500 0 0	...	...	3	3,500 0 0	...	...	3	3,500 0 0	
Tools and plant ...	2,777	2,256 0 0	143	335 0 0	2,920	2,591 0 0	136	...	2,784	2,591 0 0	
Buildings ...	4	7,154 0 0	...	...	4	7,154 0 0	...	...	4	7,154 0 0	
Ordnance stores ...	lbs. 100	...	...	...	lbs. 100	...	lbs. 100	...	...	...	
Total ...	21,387	40,075 0 0	10,179	12,848 0 0	31,566	52,923 0 0	22,731	33,906 0 0	8,835	19,017 0 0	
Ganges Division.											
Ballas, tors and ballis,	...	...	14,043	6,472 0 0	14,043	6,472 0 0	14,043	6,472 0 0	...	...	
Sein karis ...	...	...	4,529	5,087 0 0	4,529	5,087 0 0	2,388	2,682 0 0	2,141	2,405 0 0	
Kukat do. ...	...	...	734	373 0 0	734	373 0 0	570	298 0 0	164	75 0 0	
Total ...	...	...	19,306	11,932 0 0	19,306	11,932 0 0	17,001	9,452 0 0	2,305	2 480 0 0	
Buildings ...	8	16,050 0 0	...	...	8	16,050 0 0	...	...	8	16,050 0 0	
Elephants ...	1	2,000 0 0	...	...	1	2,000 0 0	...	...	1	2,000 0 0	
Tools and plant ...	2,529	6,267 0 0	3,820	71 0 0	6,349	6,339 0 0	1,916	...	5,333	6,339 0 0	
Gunpowder ...	lbs. 535	535 0 0	106	106 0 0	641	641 0 0	535	535 0 0	106	106 0 0	
Ditto barrels ...	...	...	5	429 0 0	5	429 0 0	...	...	5	429 0 0	
Fuze feet ...	13,020	260 0 0	...	...	13,020	260 0 0	13,020	260 0 0	...	...	
Slow match barrels ...	...	...	3	260 0 0	3	260 0 0	...	...	3	260 0 0	
Miscellaneous quarts ...	...	...	6	...	6	...	...	...	6	...	
Ditto lb. ...	...	...	9	...	9	...	...	...	9	...	
Total ...	16,093	25,112 0 0	3,949	866 0 0	20,042	25,970 0 0	14,571	795 0 0	5,471	25,184 0 0	

Jhánsi Division.													
Ballis ...	299	47 0 0	808	79 0 0	1,107	126 0 0	691	68 0 0	416	58 0 0			
Bamboos ...	1,833	25 0 0	4,599	56 0 0	3,432	82 0 0	3,228	39 0 0	3,204	43 0 0			
Carts ...	3	74 0 0	...	...	3	74 0 0	...	...	3	74 0 0			
Bullocks ...	6	135 0 0	...	...	6	135 0 0	...	...	6	135 0 0			
Sheds ...	2	16 0 0	...	...	2	16 0 0	...	...	2	16 0 0			
Tools ...	3	7 0 0	...	...	3	7 0 0	...	...	3	7 0 0			
Total ...	2,146	305 0 0	5,407	135 0 0	7,553	440 0 0	3,919	107 0 0	3,634	333 0 0			
Lalitpur Division.													
Ballis ...	...	...	2,503	310 0 0	2,503	310 0 0	2,317	287 0 0	186	23 0 0			
Bamboos ...	9,163	46 0 0	333,040	1,719 0 0	342,203	1,765 0 0	334,497	1,722 0 0	7,706	43 0 0			
Carts ...	12	219 0 0	...	...	12	219 0 0	...	...	12	219 0 0			
Bullocks ...	24	337 0 0	3	64 0 0	27	401 0 0	*3	53 0 0	24	348 0 0	* Died.		
Buildings ...	...	...	3	99 0 0	3	99 0 0	...	...	3	99 0 0			
Almira ...		..	1	70 0 0	1	70 0 0	...	...	1	70 0 0			
Total ...	9,199	602 0 0	335,550	2,262 0 0	344,749	2,864 0 0	336,817	2,062 0 0	7,932	802 0 0			
Summary.													
Timber, including fuel	50,148	69,734 0 0	77,875	1,81,517 0 0	128,023	2,51,251 0 0	97,431	1,83,257 0 0	30,592	67,978 0 0			
Bamboos ...	10,996	72 0 0	337,639	1,775 0 0	348,635	1,847 0 0	337,725	1,761 0 0	10,910	86 0 0			
Buildings ...	46	49,253 0 0	6	5,089 0 0	52	54,342 0 0	...	...	52	54,342 0 0			
Elephants ...	8	14,000 0 0	...	...	8	14,000 0 0	...	...	8	14,000 0 0			
Bullocks ...	30	472 0 0	3	64 0 0	33	536 0 0	†3	53 0 0	30	483 0 0	† Died.		
Tools and plant ...	23,634	18,316 0 0	4,417	1,067 0 0	28,051	19,383 0 0	1,810	865 0 0	26,241	18,518 0 0			
Country carts ...	15	293 0 0	...	...	15	293 0 0	...	...	15	293 0 0			
Ordnance stores ...	Gunpowder fuze, &c.	795 0 0	Gunpowder, &c.	795 0 0	Gunpowder, &c.	1,590 0 0	Gunpowder, &c.	795 0 0	Gunpowder, &c.	795 0 0			
Total ...	84,877	1,52,935 0 0	419,940	1,90,307 0 0	504,817	3,43,242 0 0	436,969	1,86,731 0 0	67,848	1,56,495 0 0			
									Deduct ...	1,52,935 0 0			
										3,560 0 0			

Difference in value at commencement and close of the year, Rs. 3,560 in favour of the year.

NAINI TÁL,
The 8th July, 1881.

G GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

OUDH CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT

OF

FOREST ADMINISTRATION

FOR THE YEAR ENDING 31st MARCH, 1881.

By Captain E. S. Wood, Conservator of Forests, Oudh Circle.

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CHAPTER I.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

1. During the year I visited all the Divisions in my charge, but, owing to the visit of the Inspector-General of Forests, was not able to give the same amount of attention to Pilibhít, Bhira, Gorakhpur and Gonda, as to Kheri and Bahraich.

2. The Divisions and sub-divisions, with the officers who held charge of them, are given below :—

Charge.	Officers in charge.	Remarks.
Oudh Circle ...	Captain Wood ...	Whole year.
Divisions.		
Pilibhít ...	Mr. Ponsonby ...	Ditto.
Bhira (Kheri sub-division).	Ditto ...	Ditto.
Trans-Sarda, Kheri (two sub-divisions).	Mr. Allan, assisted by Messrs. Murray and Battie.	Mr. Wilmot till July ; Mr Battie in charge till September. Mr. Dodsworth ; September-October ; Mr. Allan joined from Bahraich in November.
Bahramghat ...	Babu Kanhya Lal ...	Whole year.
Bahraich (two sub-divisions).	Mr Pinder, assisted by Mr. Battie.	Mr. Allan till November.
Gonda ...	Mr. Rebsch ...	Whole year.
Gorakhpur ...	Mr. Campbell ...	Ditto.

Mr. Wilmot, who had done excellent work, was transferred to the Central Circle. Mr. Dodsworth was, on his return from leave, posted to Kheri, but only stayed about two months, when he was transferred to Bengal, where he got ill and, died on leave in the North-Western Provinces, to the great loss of the Department. Mr. Murray,

of the School Circle, was allowed to be attached to the Kheri Division for the fire conservancy season of 1881, and has now rejoined his own circle.

3. The plan of subordinating the forest officers to the district officers was in force during the whole year and has worked remarkably well, no single instance of disagreement having occurred.

4. The Inspector-General of Forests made a visit of inspection in February. He saw all the forests but those of Gorakhpur and of Tulsipur in Gonda and Bahraich. He has writtten a report, which will be soon published.

5. Details of the following sections will be found under divisions in Chapter II.

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SECTION 1.—AREA AND BOUNDARIES.

6. The area remains practically the same as last year, *viz.*, 1,079 square miles. An exchange of the Hardoi grants, containing grass, shrub and inferior trees, has been sanctioned, almost acre for acre, for sál forests adjoining the main Bhira forests, but the tracts so obtained have not yet been gazetted as reserved forests.

In Bahraich the remainder of the division, *viz.*, 130 miles, has been demarcated by Mr. Nicholson. In Gonda the district officer has proposed making considerable additions to the Nawabganj forest; the preliminary notification has been issued.

In Gorakhpur the Collector has proposed to make over the whole of the grass lands, which were formerly attached to the Forest Department, he has consented to their being gazetted as "reserved forests" instead of "protected forests," as at first proposed, it will only be necessary to go through the regular form of gazetting, should the Local Government have no objection.

7. The following statement shows the progress made in boundary works:—

Division.	Miles, demarcated.	Miles, new ditching.	Miles, improved ditching.
Pilibhit	...	19	...
Bhira	...	16	...
Kheri-trans-Sárda	...	...	...
Bahraich	130	16	...
Gonda	...	...	5½
Gorakhpur	...	...	...
Total ...	130	51	5½

Besides this, the boundaries have been kept up and repaired.

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SECTION 2.—PROTECTION AND IMPROVEMENT.

8. Roads and bridges.—About 77 miles of new roads were made; about 600 miles of old roads kept in order, repaired and improved, six new bridges have been made and 50 old bridges repaired. The total cost has been Rs. 11,966.

9. Buildings.—One 1st class double-storied, two 1st class single-storied, one 2nd class, and seven 3rd class rest-houses have been completed; three 1st class, one 2nd class, and three 3rd class are in progress, improvements also have been made in several rest-houses and new out-houses built. The cost has been Rs. 18,687.

10. Other works.—The Soheli river has been cleared of snags as usual, and the clearing of the Pias and Rohin has been continued, two new wells have been completed, three wells nearly completed, and eight wells improved; most of the wells have been cleared out, and six other wells are in course of construction. The cost has been Rs. 3,274.

11. Demarcation.—The progress is shown under "Area and boundaries." The cost has been Rs. 2,309.

12. COMPENSATION FOR LAND AND RIGHTS.—The sum of Rs. 40 was paid for part of the village Baibaha made over to the Forest Department.

13. SURVEYS AND WORKING PLANS.—The principal amount charged under this head sanctioned by Government was for the cost of measuring a number of groves in former years, the detail of which is not now required.

14. The measurements of sál trees, which I discussed fully in para. 18 of my last annual report, have been made, *viz.*, sample areas in Pilibhít ; 24 separate trees of about 4½ feet girth in the vicinity of Dudua, four quarter acre blocks in Kheri, and four quarter acre blocks in Bahraich. In Gorakhpur and Bhira the results were not obtained for the whole year. The growth in Pilibhít has been very rapid, but the trees are generally of sizes below the 4th class (1½ feet girth). The measurements of the 24 large trees give a growth of ¼th of an inch radius a year, we are working on the supposition that the growth is only $\frac{1}{10}$th of an inch, and for safety's sake $\frac{1}{13\cdot3}$ inch, the general growth of Kheri is very good, 108 trees on one acre averaged an increase of girth of nearly an inch, which gives about $\frac{1}{7}$th of an inch radius a year, but as the average includes trees that are weakly, suppressed and decaying, I believe it will be found that the strong trees, which in the struggle for existence will survive and finally become large trees, make fully ⅕th of an inch radius. When, however, we come to Bahraich, where the land has till lately been regularly grazed over, we find the average of increased girth rather less than ½ an inch (rather more than ½ an inch in Motipur and considerably less in Bhinga), the number of trees was 92 on the acre in Bahraich, 50 in Motipur, and 42 in Bhinga. The average would be about 13 years to an inch of radius, but much less for the trees that would survive.

15. I think we have learnt from these measurements that in Kheri my theory of the growth of sál, *viz.*, the increase of ⅕th of an inch radius, is fully borne out; that where grazing has been permitted the growth is far inferior to where grazing has been long closed ; and from the times of measurement (as near as possible the 1st June, 1st December, and 1st March) that the whole growth takes place between the 1st June and 1st December ; and that in very few cases is any growth made between 1st December and 1st June. The divisional officers have done their work well ; the only mistake made has been made in complying too strictly with my instructions, and not using their own discretion in selecting the most suitable place on the trunk above or below the 5 feet point. The Inspector-General of Forests saw the experimental blocks, in these the forests were measured as they came, he, however, suggested that the best areas should be selected and miscellaneous and suppressed trees cut out, as will be seen in his report, this has been done in Bahraich and Kheri, and as the officers need only measure now in December, the rangers can practice measuring at other times, the measurements will be made on both systems. A full report will be made on this subject, giving all the detailed measurements.

16. I think it is only fair to myself to state in this report that whilst fully allowing the credit of the discovery of Mr. Fernandez (noted by Inspector-General in para. 24 in "Suggestions regarding the working of the trans-Sarda Forests, Kheri District," 20th August, 1880), that more than one ring per annum was made in young *teak*, published by him in the Indian Forester, Volume IV., page 355, dated March, 1879, I was before him in advocating that there are more rings in *sál* than years, and this, I think, can be fully proved (1) on reference to para. 83 of my report for 1867-68, dated August, 1868 ; (2) to Appendix No. VII.*† of my report for 1869-70, giving the measurements of 50 slabs counted by Mr. Forrest in September, 1869, when every concentric ring was not counted, but only such as I thought the annual rings ; and (3) in my letter No. 307*‡ of 9th January, 1879, addressed to the Inspector-General of Forests (with specimens of two young sál trees that I forwarded, to be sent

* Proceedings, Revenue (Forests) Department, North-Western Provinces and Oudh, 13th November, 1880, Nos. 1—14.

† No. 7.

‡ No. 3.

to the Paris Exhibition), the whole tenor of which was to ascertain the one ring among the other concentric rings which showed the year's growth (paras. 4, 5, 6, 7, 8, 9, 10, 17, 19, 20, 21, 26, 27.)

17. PLANTATIONS.—About 118 acres have been added to the sissu plantations, making up the total to 563 acres. I had intended sowing on 3-feet banks as an experiment, the rows to have been 15 feet apart, but the Inspector-General thought that 30 feet apart and thick sowing in the lines would be preferable. I regret that owing to the seed collected in Kheri having been sent to Gorakhpur, where seed failed, and the ranger putting off the collection of more seed till too late, the experiment could not be carried out. The cost has been Rs. 1,231.

18. PROTECTION FROM FIRE.—The table below shows the area protected and preserved :—

Division.	Area attempted.	Area protected.	Cost.
	Acres.	Acres.	Rs. a. p.
Pilibhit	17,017	13,177	1,808 8 1
Bhira sub-division	15,712	15,712	2,199 3 11
Kheri	42,080	42,080	11,135 6 9
Bahraich	30,270	30,270	9,625 14 4
Gorakhpur	73,540	72,515	5,776 14 7
Total ...	178,619	173,754	30,545 15 8

The areas in 1879-80 were 145,389 and 141,092 acres, showing an increase of 33,230 and 32,662 acres respectively.

19. OTHER WORKS OF IMPORTANCE.—The prosecutions and convictions are as below :—

Division.	*Prosecutions.*		*Convictions.*	
	Number of cases.	Number of persons.	Number of cases.	Number of persons.
Pilibhit	2	6	2	6
Bhira sub-division (Kheri)	4	8	4	8
Trans-Sárda Kheri	1	1	1	1
Bahramghat	...	...	...	...
Bahraich	13	20	12	19
Gonda	7	12	7	16
Gorakhpur	9	12	4	2
Total ...	36	59	30	52

20. The naturally-sown sissu in the lower Dudua closed block is doing well, the closed blocks in Bahraich do not yet show much germination of sál, but the soil is rapidly improving. Creepers were cut in Kheri, the parasitic "Banda" in Gorakhpur. Sál flowered and seeded freely, March-June, 1881. As I pointed out in para. 21 of last year's report, bambus flowered and seeded, and have again this year; in Salarpur, Bahraich, where the bambus are seeding, the plot has been guarded against cattle and fires, and in the north-west portion a 2-mile block has been closed, to see if there will be natural reproduction of khair and sissu.

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SECTION 3.—YIELD AND WORKING.

21. The prescribed tables are given :—

Statement of timber felled during the year.

Year.	*On hand.*		*Felled.*		*Total.*		*Disposed of.*		*Closing balance.*	
	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
1879-80 ...	7,443	340,068	59,016	163,534	66,459	503 602	66,159	497,602	300	6 000
1880-81 ...	300	6,000	87,388	92,760	87,688	98,760	87,679	98,661	9	99

The detail is given in form No. 53.

22. ABSTRACT OF FORM NO. 54.

Logs, sleepers, scantlings cut and exported.

Year.	On hand.		Felled.		Disposed of.		Closing balance.	
	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
1879-80 ...	296,102	746,087	150,994	641,880	196,505	743,847	250,591	644,120
1880-81 ...	250,591	644,120	126,357	617,723	174,527	692,932	202,421	568,911

23. ABSTRACT OF FORMS NO. 55 AND 56.

Timber account.

Description of timber, &c.	Balance in hand.	Brought to depôt.	Total.	Removed by purchasers.	Lost or used by department (including transfers).	Closing balance.
1879-80.						
Timber	8,425	7,237	15,662	1 302	7,323	7,037
Golas and ballis ...	8,532	2,419	10,951	6,025	809	4,117
Canoes and boats ...	505	648	1,153	21	86	1,046
Scantlings, cubic feet ...	47,963	169,500·87	217 493·87	153,151	25,744·87	38,598
Charcoal, maunds ...	2,902 1/8	3,831 1/8	6,733 2/8	4,614 1/8	1,522 1/8	597
Fuel „ ...	11,703 13/80	28,840	40,543 13/80	12,795	15,712	12,036 13/80
Total { Number ...	17,462	10,304	27,766	7,348	8 218	12,200
Total { Cubic feet ...	47,963	169,530·87	217,498·87	153,151	25,744·87	38,598
Total { Maunds ...	14,606 3/80	32,671 1/8	47,277 11/40	17,409 1/8	17,234 1/8	12,633 13/80
1880-81.						
Timber	7,037	5,752	12,789	737	4,929	7,124
Golas and ballis ...	4,117	7	4,124	1,526	377	2,231
Canoes and boats ...	1,046	130	1,176	68	14	1,084
Scantlings, cubic feet ...	38,598	99,760	138,358	95,037	32,181	11,140
Charcoal, maunds ...	597	907 1/40	1,504 1/40	907 1/40	50	547
Fuel, „ ...	12,036 13/80	166	12,202 13/80	...	4,000	8,202 13/80
Off-cuts „ ...	...	5,623	5,623	3,074	2,549	...
Total { Number ...	12,200	5,889	18,089	2,331	5,320	10,439
Total { Cubic feet ...	38,598	99,760	138,358	95,037	32,781	11,140
Total { Maunds ...	12,633 13/80	6,696 1/40	19,330 1/8	3,981 1/40	6,599	8,749 13/80

24. ABSTRACT OF FORM NO. 60.

Showing value of timber and of live and dead stock.

Year.	Description.	On hand at commencement of year.		Received during the year.		Sold or otherwise disposed of during the year.		On hand at close of year.		
		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
			Rs.		Rs.		Rs.		Rs.	
1880-81.	1. Surveying and other instruments.	45	990	109	401	...	...	154	1,391	
	2. Machinery ...	24	27,000	3	181	...	...	27	27,181	
	3. Tools	4,102	3,992	202	218	122	63	4,182	4,147	
	4. Office furniture ...	679	2,228	83	320	9	49	753	2,499	
	5. Tents and equipage,	55	2,079	16	311	5	152	66	2,238	
	6. Building materials,	194	1,111	117	284	53	155	258	1,240	
	7. Miscellaneous ...	523	2,335	107	1,420	7	1,736	623	2,019	
	Boats, canoes, and carts	1,065	61,540	133	5,320	91	2,160	1,107	64,700	
	Building ...	21	45,500	9	8,100	1	1,000	29	52,600	
	Elephants ...	8	20,200	2	6,600	2	5,300	8	21,500	
	Bullocks ...	8	200	8	320	...	...	16	520	
	Buffaloe ...	24	240	...	...	3	30	21	210	
	Total ...	6,748	1,67,415	789	23,475	293	10,645	7,244	1,80,245	Increase in value ... Rs. 12,830
	Timber, including fuel,	...	1,47,619	...	...	...	...	...	1,76,745	Ditto ... 29,126
										Total ... 41,956

25. The amount of timber felled has been very small this year, and, taking this into consideration, I think the result may be taken as favourable.

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26. *Section 4.—Financial Results.*—The financial results of the year, compared with those of the previous year, are as follows :—

Receipts.		Expenditure.		Surplus.	
1879-80.	1880-81.	1879-80.	1880-81.	1879-80.	1880-81.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
3,84,923	2,81,980	2,45,547	2,17,135	1,39,376	64,945

The results are not so favourable as those of the past year, but we are now only working with 2,000 instead of 3,000 trees and the felled stock is diminishing and the Patna contract finished, the many changes that had to take place owing to the transfers of Messrs. Dodsworth and Wilmot, caused by the changes made by the Government of India, were disadvantageous to revenue operations in Kheri and Bahraich, much of the time of the officers was also taken up in works of conservancy and improvement.

27. The results are given under the different heads :—

Year.	I.	II.	III.	IV.	V.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.
1879-80 ...	2,42,410	1,37,521	2,727	...	2,265	3,84,923
1880-81 ...	1,21,170	1,54,806	3,414	...	2,590	2,81,980

It will be seen that there has been a falling off owing to the causes mentioned above, the reduction of public works affects the demand for timber.

28. The divisional receipts and expenditure are herewith given.

Division.	*Receipts.*		Increase or decrease in present year.	*Expenditure.*		Increase or decrease during the year.
	1879-80.	1880-81.		1879-80.	1880-81.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	...	...	...	16,567	16,473	—94
Pilibhit	8,716	9,024	+308	8,175	14,947	+6,772
Kheri	2,75,936	1,68,920	—1,07,016	1,64,149	1,28,424	—35,725
Bahraich	44,098	30,165	—13,933	29,263	31,020	+1,757
Gonda	19,942	30,753	+10,811	6,883	8,542	+1,659
Gorakhpur ...	36,231	43,118	+6,887	20,508	17,629	—2,879
Total ...	3,84,923	2,81,980	—1,02,943	2,45,547	2,17,035	—28,512

	Rs.
	1,02,943
Less expenditure	28,512
Against the year	74,431

29. The sums under "A., Conservancy and Works," and "B., Establishments," are thus detailed :—

"A."

Year.	I. Timber and other produce removed from forest by Government agency.	II. Timber and other produce removed from forest by consumers or purchasers.	III. Confiscated, drift or waif wood.	IV. Revenue from forest not managed by Government.	V. Rent of leased forest, &c.	VI. Live and dead stock.	VII. Communications and buildings.	VIII. Demarcation, improvement, &c.	IX. Miscellaneous.	Total.
	Rs.	Rs.	Rs.			Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	98,891	6,013	75	...	...	14,270	32,608	13,408	1,267	1,66,532
1880-81 ...	71,262	6,687	172	...	...	8,245	33,928	14,648	656	1,35,599
Total ...	27,629	+674	+97	...	...	—6,025	+1,320	+1,240	—611	—30,933

"B."

Year.	I. Salaries.	II. Travelling allowance.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
1879-80	63,151	12,037	3,827	79,015
1880-81	66,103	11,234	4,099	81,436
Total ...	+2,952	−803	+272	+2,421

The increase in salaries is owing to Mr. Ponsonby's promotion and Mr. Dodsworth's having drawn all his absentee allowances on return from sixteen months' leave.

30. The actual profits for the year are given below :—

Particulars.	Amount.
	Rs.
Receipts	2,81,980
Expenditure	2,17,035
Surplus	64,945
Add increase, value of timber	29,126
Ditto live and dead stock	12,830
Giving net surplus of	1,06,901

31. In former years the amount chargeable to timber operations was taken as the actual cost of timber operations of Kheri and its depôt, Bahramghat $+ A\frac{VI}{2} + A\frac{IX}{3} + \frac{B}{3}$ *of the whole circle*, this, however, is hardly fair, as only Kheri (trans-Sarda) and its depôt, Bahramghat, are engaged in timber operations. I have in a second table only charged the fair proportion, as shown in divisional reports. Under the financial results in Kheri, Chapter II., I have entered into details ; and now give the three great heads under the old and under the new system:—

OLD SYSTEM.

Heads.	Receipts.	Amount.	Charges.	Amount.
		Rs. a. p.		Rs. a. p.
I.—Departmental timber operations.	I.	1,21,170 3 5	$A\left(I. + \frac{VI.}{2} + \frac{IX.}{3}\right) + \frac{B.}{3}$ ...	1,02,749 6 2
II.—Other revenue ...	II., III., V.	1,60,809 11 9	$A\left(II. + III. + \frac{IX.}{3}\right) + \frac{B.}{3}$ ...	34,323 5 0
III.—Formation and protection and improvement of forest.	...	...	$A\left(\frac{VI.}{2} + VII. + VIII. + \frac{IX}{3}\right) + \frac{B.}{3}$	80,062 14 3
Total ...	...	2,81,979 15 2	Total ...	2,17,035 9 5

NEW SYSTEM.

Heads.	Receipts.	Amount.	Charges.	Amount.
		Rs. a. p.		Rs. a. p.
I.—Departmental timber operations.	I.	1,21,170 3 5	A. + B. of Bahramghat. $+ A.\left(I. + \frac{VI + IX.}{3}\right) + \frac{B.}{3}$ of Kheri. $+ \frac{5}{27}$ of Direction charges ...	86,738 2 10
II.—Other revenue ...	II., III., V.	1,60,809 11 9	Divisional charges $+ \frac{11}{27}$ of Direction charges.	44,321 7 1
III.—Formation and protection and improvement of forests.	...	...	Divisional charges $+ \frac{11}{27}$ of Direction charges.	85,975 15 6
Total ...	...	2,81,975 15 2	Total ...	2,17,035 9 5

It will be seen that under the old system timber operations were debited with some Rs. 16,000 more than were fairly chargeable.

32. From the figures of the new system, which are much more correct than those obtained by the former rough method, the statement given below will show the transactions of the year. It may be said, on one hand, that the revenue charges should be debited with a share of the roads, &c.; but, on the other hand, revenue charges have been debited with a heavier share of establishment charges than the time spent by the officers on the different works truly demands:—

Particulars.	Amount.		
	Rs.	a	p.
The receipts from all sources were	2,81,975	15	2
The charges for creating and collecting revenue were	1,31,059	9	11
Leaving a balance of	1,50,916	5	3
Of this amount were spent on works of conservancy and improvement	85,975	15	6
Leaving a cash surplus of	64,940	5	9

and the value of stock has been increased.

CHAPTER II.

PILIBHIT (FORMERLY BAREILLY) DIVISION.

33. *Section* 1.—*Area and Boundaries.*—The area remains practically the same. The portions of cultivation allowed in the Sherpur forests have been given over to the cultivators and finally demarcated from the forest area, the whole of grant Dhaka Chaut (No. 2121) has been given up to cultivation, a third of the village Baibaha, consisting of 469 acres, was made over to the Department. In pargana Pilibhit the forests have been demarcated by ditching 3′ × 3′ and 19 miles in length, at a cost of Rs. 500, or about Rs. 26 a mile. In pargana Puranpur a road will run on the outer edge of the forests; of this 19 miles 6 furlongs have been completed.

34. *Section* 2.—*Protection and Improvement.*—About 46 miles of new road (including the boundary road mentioned above) have been taken in hand and 34 miles of road repaired. Besides the 3rd class rest-house referred to in para. 2 of last year's report, four new ones of the same pattern have been made. Six masonry wells were cleared and four new ones commenced. In fire conservancy the same block was taken in hand as last year, but of this about six square miles were burnt early in the season. Some young trees were measured in the vicinity of Mahofe, which show rapid growth.

35. *Section* 3.—*Yield and Working.*—The principal sources of revenue are given below:—

	Rs.	a.	p.
Firewood	2,185	4	6
Charcoal	2,078	9	0
Grasses	391	7	0
Grazing dues	720	11	5
Minor forest produce	3,648	6	9
Total ...	9,024	6	8

There are no departmental works, everything being removed by purchasers.

36.—*Section* 4.—*Financial Results*—

	Rs.	a.	p.
A. I. ...	1	3	3
A. II. ...	1,816	8	8
(A. VI.+A.IX.) ...	462	4	1
B. ...	1,588	8	2
	3,868	3	2
A. VII. ...	7,117	6	9
A. VIII. ...	7,910	9	9
(A. VI.+A.IX.),	462	4	0
B. ...	1,588	8	2
	17,078	12	8

	Rs.	a.	p.
Receipts	9,024	6	8
Cost of revenue collections with share of establishment	3,868	3	2
Giving a surplus of	5,156	3	6
From which must be deducted cost of work of conservancy and improvement with share of establishment ...	11,078	12	8
Showing a deficit of	5,922	9	2

It must be remembered that hitherto little money was spent on improvements in this Division and that such works are now being pushed on. The receipts are slightly in excess of those of last year.

BHIRA SUB-DIVISION (KHERI).

37. *Section* 1.—*Area and Boundaries.*—The area remains practically the same. The Government has sanctioned the exchange of the Hardoi grants, which only contain grass and scrub and which lie far away from the main forests, for portions of Wazirnagar and Allenganj, which consist of good sál poles and adjoin the main forests, the soil of the Hardoi grants is superior to that of the land newly acquired, but from the forest point of view the stock on the ground fully compensates for this ; Government has also obtained more remunerative terms in addition for the superiority of the soil ; the lands have not yet been officially notified as reserved forests, but they will be so this year, 1881-82. Sixteen miles of 3′ × 3′ ditching were completed.

38. *Section* 2.—*Protection and Improvement.*—A new road, six miles long, has been made and the old roads repaired, and a culvert made on the Baraunchá nala on the Bhira-Mailani Road. The 3rd class and 1st class rest-house at Madha Dih, referred to in para. 11 of last year's report, have been completed, and a new 3rd class rest-house at Kishanpur was also built during the year. Two old wells were discovered in the forests and renewed, seven wells were cleared out, and a new one sunk at Kishanpur. The Marha tank never had less than two feet of water in it. The fire conservancy was quite successful this year, and a portion of forest west of the Ul and north of the Bhira-Mailani Road (about 5,829 acres) was added to and incorporated with the Madha home block, making about 16,466 acres.

39. *Section* 3.—*Yield and Working.*—All produce is taken out by purchasers. The amounts obtained are given below :—

	Rs.	a.	p.
Timber	576	15	6
Fuel	160	9	6
Grazing	4,567	10	6
Minor forest produce	1,856	14	8
	7,162	2	2

The yield is steadily increasing.

40. *Section* 4.—*Financial Results*—

	Rs.	a.	p.
*A II. ...	1,149	7	5
½(A VI. + A IX.) ...	288	2	1
½ B	4,486	15	5
	5,924	8	11
†A VII. ...	4,081	11	5
A VIII. ...	1,249	6	8
½(A VI + A IX.)	288	2	2
½ B	4,486	15	4
	10,106	3	7

	Rs.	a	p.
Receipts	7,162	2	2
Cost of revenue collections with share of establishment*	5,924	8	11
Giving a surplus of	1,237	9	3
From which must be deducted cost of works of conservancy and improvement with share of establishment† ...	10,106	3	7
Leaving a deficit of	8,868	10	4

But, as in Pilibhít, these forests have hitherto had very little money spent on them ; we have been pushing on works of improvement which will fully repay themselves ; the forests being so near the market they were formerly overworked ; they are now having rest, revenue being obtained from stuff that would never grow into good timber. Should the Sarda canal ever pass through these forests as the plan is, the value of the forests will be at once doubled, and the good they will do to the cultivated parts south of it will be incalculable. The revenue is steadily increasing.

KHERI (TRANS-SARDA) DIVISION.

41. *Section 1.—Area and Boundaries.*—The area remains the same. The outer boundaries are nearly all ditched : 3 miles 46 chains of ditching were completed that could not be done before.

42. *Section 2.—Protection and Improvement.*—Five miles of new road were made, the road from the forests to Ramnagar, distance 8 miles, was raised and improved ; a new pile bridge was built at Salukapur, the bridge over the Soheli replaced ; 233 miles of old road were repaired and bridges put in order. The 2nd class rest-house at Sonaripur was completed, a new double-storied 1st class rest-house was commenced at Dudua and a 2nd class double storied rest-house at Naraungabad, half way between the forests and the rafting depôt at Shitaba ; important improvements were made in the headquarters office at Lakhimpur and the Shitaba rest-house. One new well was completed and three commenced and seven old wells cleared out. The Soheli river was cleared of snags as usual. Twelve and three-quarter miles of Nepal boundary were cleared.

43. Twenty-four large trees in the vicinity of Dudua were measured in June, 1880, again in December, 1880, and March and June, 1881, and ¼-acre blocks were measured at the same time ; the results will be given in a separate report, they have come up to my expectations, and tend to show that not only have we been working on the safe side for the past twenty years, but that the capital value of the forests must have vastly improved, and that the timber available yearly for the future will be several times the quantity now removed. The sissu seed sown last year came up very well, many plants having made 6 feet of growth in the year ; but, owing to the change in divisional officers and many heavy works being in progress, they were not transplanted in the cold weather, and as the transplanting in the rains is so dangerous to human life, I would not have them transplanted in the commencement of the present rainy season, but they will be planted out in the low ground in the cold weather when they are large and, it is hoped, beyond the reach of the wild animals. The bambu seed from Gorakhpur sown in the Lakhimpur garden germinated freely, and best under half shade, five hundred patches have been planted out in the vicinity of Dudua along the road to Palia and in other places, and are doing well. The natural reproduced sissu on silt deposit in the lower closed block is doing well. The growing stock of young sál is doing well all over the division. Besides the Dudua home block, the Kusambha home block of 31 square miles was added to the area protected from fire. All, I am glad to say, has been saved, where the two blocks were not separated by open grass plains, which were burnt, a strip of forest half a mile broad between two roads was burnt, so that if one large block caught fire there would be no danger to the other one. For fire conservancy purposes Mr. Murray was kindly lent by Captain Bailey of the School Circle, and without his aid fire conservancy could hardly have been successful, as Mr. Allan had no other officers available and he himself had to look after the transportation of timber and other works. Creepers were cut north-east of Dudua, from Sonaripur to Masan Khambh, at a cost of Rs. 215.

44. *Section 3.—Yield and Working.*—The selection fellings, 2,000 sál trees yielding about 2,078 logs 834 pieces, took place in blocks, to the south of Masan Khambh and north and north-east of Dudua the timber is superior to that of the fellings of 1880 ; 3,080 logs and pieces were carted to depôt, some of last year's fellings being included, 34 logs of old fellings near Khairagarh were carted to the river ; 3,569 logs were rafted from Suthiana and Dudua, all but 10 which sank, reaching Shitabaghat, average cost Rs. 3-1-4 per log ; 2,298 logs were rafted from Shitabaghát and 44 from Ramnagar for Bahramghát. There were great difficulties in rafting from Shitaba, and also in landing at Bahramghát, as the Chauka was not navigable, and to get the logs to the depôt they had to go several miles past Bahramghát on the main river, and then had to be hauled up-stream, this caused an extra expense in rafting, but all told

the cost was about Rs. 6 per log from Shitaba. Five hundred and seventy sissu trees were taken by the Fatehgarh Gun Carriage Agency, these were cut on the Soheli low grounds between Khairigarh forest and Dudua, Rs. 12,394 have been received on their account. Owing to small demands for public works not very much timber was removed by purchasers, only about 500 logs being so removed. Catechu manufacture was continued, eight permits were given for 5,300 pots at 9 annas a pot, the khairahas are working in two places—one near Kakraha Tal on the Soheli low grounds and the other on the forests near Banbirpur on the Mohan.

45. *Section* 4.—*Financial Results.*—Rs. 7,299 were received for timber removed by departmental agency, the other receipts being Rs. 43,142, total Rs. 50,441, but the balance of the Bahramghát Depôt must be credited to this division from which the timber came, charging the whole of the Bahramghát Depôt expenses to departmental timber operations. The following figures will show the working of the division and its depôt:—

	Rs.	a.	p.
Receipts from timber removed by departmental agency, Kheri ...	7,299	5	8
Ditto ditto Bahramghat ...	1,11,316	6	7
	1,18,615	12	3
Kheri expenses, part*	55,198	3	8
Whole of Bahramghát†	28,095	3	4
Leaving a profit on timber operation of	35,322	5	3
Other receipts were	43,141	12	11
Cost of revenue collection with share of establishment‡ came to ...	9,629	9	7
Leaving a profit of	33,512	3	4
And a total clear profit from all sources of	68,834	8	7
From which must be deducted cost of works of conservancy and improvement with share of establishment§ ...	19 470	1	9
Leaving a cash surplus	49,364	6	10

	Rs.	a.	p.
* A.I. ...	46,965	14	8
½ (A.VI. + A IX,)...	1,073	12	6
⅓ B. ...	7,158	8	6
	55,198	3	8
† A. ...	24,621	7	3
B. ...	3,473	12	1
	28,095	3	4
‡ A.II. + A.III. ...	1,397	4	7
½ (A.VI. + A.IX.) ...	1,073	12	6
⅓ B. ...	7,158	8	6
	9,629	9	7
§ A.VII. ...	9,161	0	5
A.VIII. ...	2,076	12	5
½ (A.VI. + A.IX.)...	1,073	12	5
⅓ B ...	7,158	8	6
	19,470	1	9

46. I have shown the figures in the above detail as the Inspector-General of Forests in his Suggestions regarding the working of the trans-Sarda forests, Kheri district, dated Simla, 20th August, 1880, seemed disposed to think that the surplus from timber operations was insignificant. The Inspector-General has added ½ of A.VI., ⅓ of A.IX., and ⅓ of B. *of the whole circle* to the regular timber operations. There are now nine small charges, *viz.*, (1) Pilibhít, (2) Bhira, (3) Newal-khar and (4) Khairagarh (Kheri), (5) Bahramghát, (6) Motipur and (7) Bhinga, (Bahraich), (8) Gonda and (9) Gorakhpur. Timber operations, properly so called, only take place at Bahramghát and in one of the sub-divisions of Kheri trans-Sarda, but I count the two sub-divisions as being worked: hence it is evident that the share truly debitable to timber operations should be the whole of the Bahramghát Depôt charges (A. + B.) + A.I. + ½ (A.VI. + A.IX) + ⅓ B. *of the Kheri Division only* + $\frac{5}{27}$ths of Direction charges. The old table, I consider, gives very wrong results, but I am glad to say this has been rectified by the new Code form 57, page 164, which shows divisional totals for the three great heads of expenditure, *viz.*, I., timber removed by Government agency; II., other revenue; III., formation, protection, and improvement of forests: now it is evident that in divisions where there are no timber operations there ought to be no charges for such, and the error of charging to timber operations ⅓rd of the establishment and ½ share of A. VI. + $\frac{A.IX.}{3}$ of six other charges is at once apparent.

BAHRAMGHAT (DEPOT) DIVISION.

47. *Section* 1.—*Area and Boundaries.*—Nil.

48. *Section* 2.—*Protection and Improvement.*—Nil.

49. *Section* 3.—*Yield and Working.*—Two thousand and ninety eight logs were received in depôt during the year. The timber was inferior, having been cut in places where the best trees had been removed in former years, so much so was this the case that some Nepal logs of the best quality had to be bought at a cost of Rs. 2,661 for supplying long pieces in indents. The outturn, however, was good, owing to the care taken in selecting the logs for the works required. The balance of indents at the commencement of the year was 5,966 cubic feet, during the year indents for 18,840 cubic feet were received, indents for 1,117 cubic feet were cancelled, 19,514 cubic feet were supplied, leaving a balance to be supplied at the end of the year of 4,175 cubic feet, most of which have since been completed. The Patna contract was concluded. The table below gives a comparative statement of last year and this year's work at the saw mill:—

Year.	Value of work done at old rates.	Expenditure.	Surplus.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
1879-80	13,997 5 9	10,129 9 11	3,868 11 10
1880-81	9,296 0 0	8,532 0 0	764 0 0

The cost was Rs. 18-15-11 per 100 cubic feet.

The increased cost is owing to the old boiler got from the Department Public Works and which gave much trouble in 1875, again getting out of order, entailing frequent stoppages; but, on the other hand, the work performed was really of a more paying character. The depôt expenses were much decreased, having been Rs. 50,940 in 1879-80 and Rs. 28,095 in 1880-81, the quantity of timber, owing to decreased selection fellings, having much to do with it; but every effort has been made to reduce depôt expenses.

50. *Section* 4.—*Financial Results*—

	Rs.	a.	p.
The receipts were	1,11,316	6	7
Expenditure was	28,095	3	11
Giving a surplus of	83,221	3	3

But, as shown under Kheri trans-Sarda, this depôt receives all its timber from that Division, and the results have been shown in para. 45 of this report.

BAHRAICH DIVISION.

51. *Section* 1.—*Area and Boundaries.*—Mr. Nicholson, the officer deputed by Government, continued the work where it was left off last year. The Charda forest, section V., and the Sohelwa forest, section VIII., had not to be re-demarcated, the Maharaja of Balrampur being satisfied with the boundaries already fixed, the principal work was in Chakia, section IV. and sections VI, and VII., the Kakardari and Bhinga forests. The whole of demarcation, 130 miles, making with 120 miles last year's demarcation a total of 250 miles, was completed. The whole of the ditching has not been done, but only sixteen miles; as the soil was too hard to work in; stations, however, were made with the directions to be taken marked on each side, the work, it is hoped, will be completed before next cold weather, it will be done when the earth is moist and thus more expeditiously better and cheaper than when the earth is hard and dry and dusty. The encroachments were small and made by the taluqdars of

Nanpara and Bhinga, and they have had to give up the land so encroached on to the Forest Department. The only case in which a Forest Department boundary had to be obliterated was in the village of Urgurwa (Chakia), where by a curious order it was ruled that the reserved trees were to be the property of Government, but the land to be the taluqdar's. When a proper market can be obtained for this timber, it appears to me that it will be the best thing to clear it off as soon as possible and let the taluqdar have the land for cultivation, or an exchange might be effected of the standing stock for lands which are situated inside the forests. Some hundreds of sál boundary posts have been prepared for placing in position when the ditching is taken in hand.

52. *Section 2.—Protection and Improvement.*—Eight miles of new road were made in the Motipur forests, three in Chakia and arrangements have been made to connect the road from the Chakia rest-house to the edge of the forest with the country road from Motipur to Lalpur Chanda Jhar, thus giving direct communication between Motipur and the Chakia rest-house and the rest of the Chakia forests. In the Sohelwa forest eight miles have been marked out and are in course of construction. The roads and fire-paths were cleared at a cost of Rs. 1,560; a few large bridges were completed and the rest repaired. The Motipur single-storied 1st class rest-house was completed, the same kind of rest-house at Sohelwa is nearly completed, and another at Kharaincha (Chakia) is in a forward state. Third class rest-houses are in progress at Martiha junction (completed this year), being the eastern limit of the Nishangara home block, and breaking the distance between Motipur and Nishangara, which is 17 miles; the other at the Bharta junction, in section VI., and dividing the distance between Ponsonbyganj and Kakardari. Out-houses have been built at Sujauli, Nishangara, Motipur, and Kakardi. Improvements have been made in Kakardari and Abdulganj rest-houses, and the usual repairs done.

Five wells were cleared out and six wells had masonry added on above ground level, which keeps the water from dust, dirt and leaves, the new well at Bharta is completed, and the wells at Kharaincha, Sadulaganj, and Sohelwa nearly so. Seven hundred sissu seedlings were transplanted as an experiment in the Kakardari closed block and are doing well, many of the seedlings transplanted at Nishangara died and were replaced, the grass is very long there and is apt to choke the transplants. Progress is being made in our knowledge of the wants of the seedlings, and when we have learnt more we can carry on our work more expeditiously and on a larger scale, from the experience that we have already gained I believe that the system of planting large seedlings that will at once top the grass with 3-foot roots, with perhaps underground watering for the first hot weather and in lines 30 feet apart, with 15 feet or less distances in the lines, will be the plan that will be the most successful in lands that are available to us and which are so thickly clothed with grass. Four quarter acre blocks of sál were marked off, the trees painted and measured, the result of the growth is not so rapid as in Kheri, being only on an average, an increase of half an inch girth in a year, or $\frac{1}{12}$th of an inch radius; but there are 91 sál and asna trees on the acre besides other miscellaneous trees, and this growth is on soil which until lately has been yearly grazed over and constantly fired, whereas in Kheri, though there have been a few fires in the last six years, owing to there being plenty of grazing on the lowlands, the grazing in the sál forests was formerly much less than in Bahraich, and the forests in which the measurements have been made in Kheri have not been grazed over for ten years or more; besides this there may be something in the soil and condition of vegetation better adapted for the growth of sál in Kheri than in Bahraich. Though credit is only taken for the lands protected by the regular fire conservancy establishment, fully three-fourths of the whole of the sál forests escaped from fire; but when the cattle eat the whole of the undergrowth and do not give fires a chance, it would, I consider, be misleading to count these forests as protected from fire, for though fires damage the seedlings, the ashes of the plants burnt are left to enrich the soil, whereas when land is constantly grazed the chemical constituents of the plants

grazed are removed from the forests to the villages. The area of the Nishangara closed block was increased from 12,080 acres to 18,670 acres, or from 18·8 to 29·1 square miles. A portion of forest near Salarpur, on which bambus seeded last year and are flowering this, has been fenced in and protected from cattle ; and, at the suggestion of the Inspector-General of Forests, a small block of two square miles situated in the north-east corner of the north Bhartapur forests has been closed against grazing, to see if there will be any natural reproduction of sissu and khair.

53. *Section* 3.—*Yield and Working.*—A few green and dead sál trees were sold standing to purchasers, but nothing like what can be termed timber operations took place. The value of free gifts to villagers was Rs. 26,550. The forests are resting. The only quantity of mature timber is in Bhinga, but there is no reproduction there, and till parts of the forest have been closed and young growth got a good start, the removing of large trees will have to be very gradual.

There was not much demand for timber during the year, and the frequent change of officers and the time taken up in demarcation works were against forcing the market.

There was a good deal of timber removed from Nepal, but we can afford to wait.

54. *Section* 4.—*Financial Results.*—These, from the causes stated in the last paragraph, have not been so good as usual. Revenue, A.I.*a*, was chiefly from the old boats made many years ago, and is too small an item to be separated from timber removed by purchasers ;—

	Rs.	a.	p.
Receipts were	30,164	7	5
The cost of revenue collections with share of establishment was ...	9,317	4	0
Leaving a surplus of	20,847	3	5
Against which must be charged the cost of works of conservancy and improvement with share of establishment	21,703	8	1
Leaving a deficit of	856	4	8

which could easily have been converted into a surplus of Rs. 10,000 or more if expenditure on improvements had been reduced, little now remains to be done except in Sohelwa where roads will have to be made both with reference to fire protection and also the extraction of forest produce these roads will principally have to be on the watersheds between nalas, and running from the cultivation to the foot of the hills ; when these have been made, the most favourable positions for cross roads for fire conservancy and inspection will be ascertained.

GONDA DIVISION.

55. *Section* 1.—*Area and Boundaries.*—The area remains the same. Several reserved grants will be added to the Nawabganj forests, of which the Ramgarh forest forms part ; this will make a tract of forest really worth looking after and preserving. The boundaries in Tulsipur were repaired and five and half a miles of improved ditching made.

56. *Section* 2.—*Protection and Improvement.* In section IV, Chandanpur sál forest, two new lines have been made, at present they are only passable for elephants and horses, they are over rough country, and experience will show whether the nalas had better be bridged or sloped off, they will probably be made into cart-roads, but at present are used for fire conservancy and inspection purposes, length 5¼ miles, cost Rs. 188. In the Nawabganj forest two new lines have been made from the rest-house to the Utraula-Fyzabad Road, for the easy export of produce, total 1 mile 6 furlongs, cost Rs. 99. Thirty-seven miles of old road were repaired ; cost Rs. 203. At Chandanpur a small 3rd class rest-house was made for the officer, whilst the 1st class rest-house, the bricks for which are all ready, is in course of construction. Timber for the rest-house at Ramgarh is nearly ready. Most of the Tulsipur forests were saved from fire, but I regret to say that the Ramgarh forest was burnt late in the

season, though I do not anticipate much damage, as the grass in the sál forest is not long or thick. Mr. Rebsch reports favourably of the reproduction of sál and dhao in parts that have been saved from fire for the last three years.

57. *Section 3.—Yield and Working.*—An attempt was made to sell dhao axles for carts at the Nawabganj market, this has not yet succeeded well, but the experiment will be continued. Rs. 2,234 were obtained from the manufacture of catechu, charcoal and fuel. The receipts are much larger than in former years.

58. *Section 4.—Financial Results.*—These have been better than ever (though the arrears of grazing dues help to swell the totals), and reflect credit on Mr. Rebsch's management :—

	Rs.	a.	p.
Receipts were	30,753	2	8
The cost of revenue collection with share of establishment was	3,635	2	0
Leaving a surplus of	27,118	0	8
From which must be deducted cost of works of conservancy and improvement with share of establishment	4,906	15	1
Leaving a cash surplus of	22,211	1	8

More money in the future will have to be spent on improvements in this Division.

GORAKHPUR DIVISION.

59. *Section 1.—Area and Boundaries.*—The area remains the same as before. The Collector has proposed handing back the whole of the grass lands, which were formerly alienated, to the Forest Department. I have pointed out the inexpediency of having different classes of (reserved and protected) forests adjoining and in the same district, and the Collector has now agreed with me that they should all be gazetted as reserved forests instead of as protected, as was at first proposed : the having the tree and grass lands under one officer will, I believe, tend to economy in their management and make fire conservancy easier. When the lands have been made over, it will be, I think, advisable to have an officer specially deputed—as Mr. Nicholson was in Bahraich—to mark down all the boundaries on the ground and finally demarcate them with a ditch, as has been down in Oudh.

60. *Section 2.—Protection and Improvement.*—Thirteen miles of new road have been made and the system is being carried out, the old roads were repaired. Two pile bridges over the Malao swamp have been taken in hand and one completed ; these will be of much use in opening out the northern forests. A 2nd class rest-house has nearly been completed at Daibar and one has been started at Mandholia ; the old rest-house have been repaired, and some out-houses for labourers erected. Two new wells have been commenced at Daibar and Mandholia and two old wells cleared. The Pias and Rohin rivers, by which timber is carried from the northern forests to the Gorakhpur market, are being cleared of snags. The small plantations of teak, tùn, and sissu made by Messrs. Amery and Grant are doing remarkably well. The sissu planted last year has been rather choked with grass. Fifteen acres were planted with sissu at 30 feet apart, 63 at 15 feet apart at Ramgarh, and 20 acres at 15 feet apart at Mandholia. Mr. Campbell reports that of 18,000 sissu seedlings transplanted in the usual way, 3,600, or 20 per cent., died ; with the flower-pot system, roots some 12 to 18 inches long, out of 1,000, 120 or 12 per cent., died ; with the 3-feet roots kept in by cylindrical tiles, out of 500 none have died. Besides the new transplants, several hundred blanks were filled and dead seedlings removed and replaced. The exotic plants (mahogany) have failed ; five hundred plots of bambu have been planted out and are

doing fairly well, notwithstanding their being eaten over by hares and other animals. The experiment alluded to last year in planting bambu sugarcane fashion failed, as the shoots were constantly eaten off by hares; arrangements are being made to protect the nurseries against these pests; a few sissu seedlings planted by myself in 1879 in low damp ground, and which received no water since they were transplanted, are reported as doing well. Various experiments with indigenous trees have been conducted and will be proceeded with. A tile machine for making cylindrical tiles with inner areas of 5 inches and 2 inches diameter, the former for growing the seedlings in and the latter for sub-surface watering, has been kindly lent to the Department by Mr. Angus Campbell of the Roorkee Workshops; his son, Mr. Alexander Campbell, having obtained the proper sort of clay, is now turning out good tiles. Cutting out the parasite "bandar" was continued in Ramgarh and Tilkonia. As regards fire conservancy, of 73,540 acres attempted to be protected, only about 1,125 acres failed—1,000 in Bhara Baisi and 25 in west Lehra; the usual fire lines were cleared. In thinning operations, 400 acres were operated on in block No. 8, Ramgarh, and 200 acres in Tilkonia; the cost was Rs. 1,163-8-2 and Rs. 474-1-3 respectively, and receipts Rs. 6,506-1-6 and Rs. 1,743-4-8, giving a surplus of Rs. 5,342-9-4 and Rs. 1,269-3-5, or a total of Rs. 6,611-12-9, in addition to which Rs. 855-5-8 were received from firewood in Tilkonia.

61. Besides these operations conducted on forest account, the officer in charge helped in the arboricultural operations of the district. In the plot of 12 acres made over to the district for mango grafts, the land was stumped and cleared, of the 100 mango grafts planted last year 40 were killed by frost, though protected, and 300 new plants have been planted out and are doing well; the well in the centre of the plot is nearly completed, arrangements are being made for efficient fencing. Five thousand pine-apple shoots have been planted between the mango grafts, both as a source of profit and to keep the ground clear of grass, and are doing well. The young trees of *Pithecolobium Saman* are doing well, but, like the country sirris, they grow far too much to straggling branches, which are easily broken by the wind, as fodder trees I think they are inferior to the indigenous figs (pipal, bargad, gular, and pakar). In a number of gharras placed alongside newly planted young trees I made holes in the bottom, so that the water from the gharras might sink into the soil below. The trees where this has been done have succeeded better than where the gharras have not been so treated, this, I think, tends to show that the system of sub-surface watering that we are experimenting on is the right method; the new system will be a combination of gharras and 2-inch tiles and will carry the water to the bottom of the tap root: where the system was commenced last year with the rough material at our disposal, the trees are further advanced than others not so treated. In the nursery several hundred of mangoes and jacks were reared: most of the mangoes were made over to the district authorities for planting, but the jacks were eaten by hares. Galvanized wire netting, ¼ inch mesh, has now been put round the nursery, and it is hoped that the seedlings will be spared for the future; arrangements have been made during the present rains for 50,000 jack, 100,000 mahua, 50,000 jaman, and 50,000 mango seedlings.

62. I examined in November the roots of the sissu seedlings sown in April and planted in 3-feet hollow cylinders and on masonry bottom, the tap roots had reached the bottom and then turned up; many seedlings had attained a height of six or seven feet in seven months.

63. *Section* 3.—*Yield and Working.*—Besides the thinnings before alluded to, 1,226 sál trees that had been tapped for resin in former years were felled and taken away by purchasers in Nagwa and Sonari forests; asna and dry poles of sál and firewood were taken from the other forests.

64. *Section* 4.—*Financial Results*—The receipts were Rs. 43,118-3-1—a large revenue, considering the few large trees that were felled, and Mr. Campbell deserves great credit for his work.

	Rs.	a.	p.
A. I. ...	278	9	0
A. II. ...	144	11	6
½A. VI. ...	503	8	8
½A. IX. ...	32	13	0
½B. ...	4,669	13	6
	5,629	7	8
† ½A. VI. ...	503	8	7
A. VII. ...	1,752	2	7
A. VIII. ...	5,040	12	6
½A. IX. ...	32	13	0
½B. ...	4,669	13	6
	11,999	2	2

	Rs.	a.	p.
The receipts were	43,118	3	1
The cost of revenue collection with share of establishment* was ...	5,629	7	8
Giving a surplus of	37,488	11	5
From which must be deducted cost of works of conservancy and improvement with share of establishment,†	11,999	2	2
Leaving a cash surplus of... ...	25,489	9	3

CHAPTER III.

UNRESERVED FORESTS.

Blank.

CHAPTER IV.

GENERAL REMARKS.

65. Mr. Ponsonby has received promotion during the year. The revenue in Pilibhít and Bhira has increased. Mr. Allan has done good service in the heaviest worked division in the circle, and it is not his fault that the revenue in the Kheri Division combined with Bahramghát has fallen off. Babu Kanhya Lal has worked the Bahramghát Depôt with great care and economy, and has been confirmed in his appointment of Superintendent of the depôt with rank of Sub-Assistant Conservator. The revenue in Gorakhpur and Gonda has increased, and I have had the pleasure of recommending both Messrs. Campbell and Rebsch for promotion to Assistant Conservator, 3rd grade. In Bahraich there has been a falling off of revenue, partly owing to the changes and the work of demarcation, conservancy and improvement; Mr. Pinder, though very energetic in some things, has hardly stability or experience enough to work so large and important a Division as Bahraich is; I had expected to get the services of Mr. Dansey, but that officer was no sooner posted to Oudh than he went on furlough. Mr. Battie has done good work in the Divisions to which he has been attached; and Mr. Murray, who was lent by the School Circle for fire conservancy in Kheri, carried out his work most satisfactorily.

Of the rangers, Amanat-ulla Khan in Gonda, Hussain Shah in Bahraich, and Chiranji Lal in Pilibhít, deserve special mention. Forester Jagdeo Singh has worked extremely well in Gorakhpur.

66. The office establishment has done good service; the work is steadily increasing, and both the forest and office establishment require to be put on a better footing.

67. The district officers have worked most cordially with the Department, and, as before reported, there has not been the slightest hitch in any way.

68. The year has been a very unhealthy one; I was attacked in November with fever and ague which would not leave me, and, having to be with the Inspector-General, I could not leave the forests till March, when I had to go to Lucknow and Bahramghát to recruit; the divisional officers and almost every ranger has been laid up at times with fever and its effects; the office establishment also suffered much, and I regret to have to state that several subordinates of the forest establishment and private servants of officers, and many of the workpeople died.

NAINI TÁL,
The 27th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle.

STATEMENTS.

FORM No. 45.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Area of Reserved Forests, 1880-81.

Division.	Name of forest civil district or territory.	*Area on 1st April*, 1880.		*Added during the year.*		*Excluded or transferred to other heads.*		*Total on 31st March*, 1881.		Number and date of notification of addition and transfer, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
Pilibhít ...	Pilibhít Division ... „ District ...	137	87,680	...	...	...	...	137	87,680	...	
Bhira Sub-division	Bhira Sub-division ... Kheri District ...	164	104,960	...	...	...	...	164	104,960	...	Exchange of forest lands (two plots in Kheri and five plots in Hardoi district) with that of Mr. Hearsey's (Allenganj and Wazirnagar) containing 4,206 acres, in lieu of forest lands, containing 4,288 acres, as sanctioned by Government of India in its No. 227 F. of 1st April, 1881, and Local Government's No. 279 of 19th April, 1881.
Kheri ...	Niwalkhar, Khairigarh } Kheri District ...	263	168,320	...	...	...	...	263	168,320	...	Four Katna grants not included in reserved forests, containing 1,842 acres, have been made over to the Deputy Commissioner, Kheri, as per Local Government's Nos. 1017 and 1018 of 29th April, 1881.
Bahraich ...	Motipur, Bhinga } Bahraich District ...	257	164,480	...	...	...	...	257	1,64,480	...	A patch of forest known as Nainihan has been excluded from the list of reserved forests.
Gonda ...	Gonda Division ... „ District ...	143	91,520	...	...	...	...	143	91,520	...	The grants Sujui Moneypur, Glynn grant, and Jankinagar are about to be made reserved forests, *vide* Local Government No. 82 of 26th January, 1881.
Gorakhpur ...	Gorakhpur Division ... „ District ...	115	73,600	...	...	...	...	115	73,600	...	Certain grass lands in Gorakhpur are also about to be resumed, *vide* Local Government No. 306 of 25th April, 1881.
	Total ...	1,079	690,560	...	...	...	...	1,072	690,560	...	

Area of unreserved forests, 1880-81.

Blank.

FORM No. 46.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Area of Plantations, 1880-81.

Division.	Name of plantation.	*On 1st April*, 1880.		*During* 1880-81.		*On 31st March*, 1881.		Remarks.
		Area.	Total cost.	Area added.	Cost.	Total area.	Total cost.	
		Acres.	Rs. a. p.	Acres.	Rs. a. p.	Acres.	Rs. a. p.	
Bahraich ...	Nishangarah	...	...	10	317 8 5	10	317 8 5	
Gorakhpur ...	Ramgarh	405	5,883 0 8	88	861 15 0	493	6,744 15 8	
	Sonari	40	202 3 9	20	51 12 5	60	254 0 2	
	Total ...	445	6,085 4 5	118	1,231 3 10	563	7,316 8 3	

Nani Tal,
The 7th June, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 47.

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Area of forest tracts protected from fire during the dry season of 1881.

Division.	Forest tracts.	Up to 30th June, 1881.		During the dry season of 1881.				Total cost up to 30th June, 1881.	Year when protection commenced.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failure.	Actually protected.	Amount expended.		
		Acres.	Rs. a. p.	Acres.	Acres.	Acres.	Rs. a. p.	Rs. a. p.	
Pilibhit ...	Mahofe home block	16,967	560 12 8	17,017	3,840	13,177	1,247 11 5	1,808 8 1	July, 1879.
	Total ...	16,967	560 12 8	17,017	3,840	13,177	1,247 11 5	1,808 8 1	
Bhira Sub-division ...	Murha "	8,205	1,468 4 8	15,712	...	15,712	730 15 3	2,199 3 11	January, 1877.
	Total ...	8,205	1,468 4 8	15,712	...	15,712	730 15 3	2,199 3 11	
Kheri ...	Dudua home block	21,580	8,995 7 5	22,240	...	22,240	1,431 1 3	10,426 8 8	March, 1872.
	Kusumbha "	...	...	19,840	...	19,840	708 14 1	708 14 1	January, 1881.
	Total ...	21,580	8,995 7 5	42,080	...	42,080	2,139 15 4	11,135 6 9	
Bahraich ...	Section II., Murtcha bamboo block	12,080	1,030 3 10	640	...	640	968 2 10	1,998 6 8	February, 1878.
	" Angarghat "			1,280	...	1,280			
	" Nishangara home block			18,670	...	18,670			
	Section V., Charda "	6,389	...	4,960	...	4,960	879 7 8	7,627 7 8	March, 1875.
	" Dhauria "			1,440	...	1,440			
	Section VI., Kakardari "	3,235	6,748 0 0	22	...	22			
	" Asnarea "			16	...	16			
	" Lachmanpur "			16	...	16			
	Section VII., Block No. 1 "			...	...	...			
	" " No. 2 "			1,186	...	1,186			
	" " No. 3 "			2,040	...	2,040			
	Total ...	21,704	7,778 3 10	30,270	...	30,270	1,847 10 6	9,625 14 4	
Gorakhpur ...	Ramgarh and Tilkonia	6,754	3,565 11 6	6,754	...	6,754	2,211 3 1	5,776 14 7	June, 1875.
	Nagwa	5,996		6,000	...	6,000			
	Sonari and Jagpur	22,132		22,132	...	22,132			
	Dudhai	8,500		8,600	...	8,600			
	Bhillumpur and Banki	3,354		4,154	...	4,154			
	East Lehra	7,600		7,600	...	7,600			
	West "	12,300		12,300	25	12,275			
	Bhari Baisi and Bhari Babun	6,000		6,600	1,000	5,000			
	Total ...	72,636	3,565 11 6	73,540	1,025	72,515	2,211 3 1	5,776 14 7	
	GRAND TOTAL ...	141,092	22,368 8 1	178,619	4,865	173,754	8,177 7 7	30,545 15 8	

NAINI TAL,
The 17th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 48.

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Prosecutions for breaches of Forest Rules, 1880-81.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorized felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other offences.		TOTAL.				Remarks.
									Prosecutions.		*Convictions.*		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Pilibhít Division ... / Pilibhít District ...	...	...	3	7	...	...	...	...	2	6	2	6	
Bhira Sub-Division ... / Kheri District ...	...	...	3	7	...	...	1	1	4	8	4	8	
Kheri Division ... / Kheri District ...	...	...	1	1	...	...	...	...	1	1	1	1	
Babramghát Division ... / Bara Banki District ...	...	...	...	...	...	...	...	...	...	...	...	...	
Bahraich Division ... / Bahraich District ...	...	...	12	19	...	...	1	1	13	20	12	19	
Gonda Division ... / Gonda District ...	...	...	7	12	...	...	...	...	7	12	7	12	
Gorakhpur Division ... / Gorakhpur District ...	1	1	4	6	1	2	3	3	9	12	4	6	
Total ...	1	1	30	52	1	2	5	5	36	59	30	52	

NAINI TAL,
The 29th June, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 49.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Summary of expenditure of the different divisions for 1880-81.

Budget heads.	Direction.	Kheri Division.	Bhira Sub-division.	Bahramghát Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhít Division.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency—									
a. Timber	...	7,299 5 8	...	1,11,110 6 9	760 0 0	...	1,870 12 0	...	1,21,040 8 5
b. Firewood and charcoal	...	...	...	...	...	...	129 11 0	...	129 11 0
c. Bamboos	...	...	...	...	...	...	...	...	...
d. Sandal-wood	...	...	...	...	...	...	...	...	...
e. Grass and other minor produce	...	...	...	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers—									
a. Timber...	...	22,560 11 4	576 15 6	...	12,184 12 2	11,676 5 6	26,619 8 9	1,488 4 6	75,106 9 9
b. Firewood and charcoal	...	296 15 10	160 9 6	...	342 1 11	1,168 8 1	8,705 12 11	4,263 13 6	14,937 13 9
c. Bamboos	...	...	...	...	25 15 6	...	...	...	25 15 6
d. Grazing and fodder grass	...	11,640 9 9	4,567 10 6	...	7,268 14 6	14,186 9 0	1,794 1 5	720 11 5	40,178 8 7
e. Other minor produce	...	7,233 3 3	1,711 0 3	...	6,619 6 10	3,508 3 7	3,526 9 11	1,958 2 3	24,556 10 1
III.—Confiscated, drift and waif wood	...	927 7 2	...	...	2,470 0 0	11 12 6	5 0 0	...	3,414 3 8
IV.—Revenue from forests not managed by Governmen—									
a. Duty on foreign timber and other produce ...	...	...	...	...	...	...	...	...	...
b. Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...
V.—Miscellaneous—									
a. Fines and forfeitures	...	32 8 0	21 14 0	...	...	61 0 0	5 9 7	...	120 15 7
b. Refunds	...	14 9 0	1 2 8	4 0 0	...	29 12 0	124 9 0	526 11 0	700 11 8
c. Other sources	...	435 12 7	122 13 9	201 15 10	493 4 6	111 0 0	336 8 6	66 12 0	1,768 3 2
Total Receipts ...	...	50,441 2 7	7.162 2 2	1,11,316 6 7	30,164 7 5	30,753 2 8	43,118 3 1	9,024 6 8	2,81,979 15 2

Calcutta,
The 18th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 49—(*continued*).

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Summary of expenditure of the different divisions for 1880-81.

Budget heads.	Direction.	Kheri Division.	Bhira Sub-division.	Bahramghát Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhít Division.	Total.
A.—CONSERVANCY AND WORKS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency:—									
a. Timber	...	46,950 11 8	...	23,902 13 10	114 4 0	...	278 9 0	...	71,246 6 6
b. Firewood and charcoal	...	15 3 0	...	...	...	...	...	...	15 3 0
c. Bamboos	...	...	...	...	...	...	...	...	...
d. Sandal-wood	...	...	...	...	...	...	...	...	...
e. Grass and other minor produce	...	...	...	...	...	...	...	1 3 3	1 3 3
II.—Timber and other produce removed removed from the forests by consumers of purchasers	...	1,278 1 11	1,149 7 5	...	1,951 4 0	347 7 11	144 11 6	1,616 3 8	6,687 4 5
III.—Confiscated, drift and waif wood	...	119 2 8	...	...	...	52 12 10	...	...	172 0 6
IV.—Removed from forests not managed by Government—									
a. Duty on foreign timber and other forest produce...	...	...	...	...	...	...	...	...	...
b. Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...
V.—Rent of leased forests and payments to shareholders in forests managed by Government	...	...	...	...	...	...	...	...	...
VI.—Live stock, stores, tools and plant—									
a. Purchase of cattle	...	...	160 0 0	...	...	...	...	160 0 0	320 0 0
b. Feed and keep of cattle	...	2,478 2 9	227 14 3	465 6 11	1,135 12 5	618 12 0	662 3 3	556 13 10	6,145 1 5
c. Stores, tools and plant	10 0 0	358 1 6	125 3 0	190 11 0	278 14 3	295 4 0	344 14 0	177 1 9	1,780 1 6
VII.—Communications and buildings—									
a. Roads and bridges	...	3,878 6 5	962 3 5	...	2,947 4 11	591 3 7	594 5 9	3,692 14 6	11,966 6 7
b. Buildings	...	4,967 13 0	2,969 8 0	62 7 6	6,946 3 5	400 0 7	1,121 3 10	2,220 3 8	18,687 8 0
c. Other works	...	314 13 0	150 0 0	...	1,556 7 3	12 2 6	36 9 0	1,204 4 7	3,274 4 4
VIII.—Demarcation, improvement and extension of forests—									
a. Demarcation	...	203 15 2	408 14 0	...	1,065 5 11	66 7 1	10 0 0	554 13 6	2,309 7 8
b. Compensation for land and rights	...	...	...	...	...	...	...	40 0 0	40 0 0
c. Surveys and working plans...	...	55 13 6	50 0 0	...	69 13 3	35 4 7	2 8 0	67 10 3	281 1 7
d. Plantations	...	16 1 5	...	...	78 0 0	...	894 15 0	...	989 0 5
e. Protection from fire	...	1,545 6 3	790 8 8	...	1,701 6 1	108 1 0	2,011 5 2	1,248 2 0	7,404 13 2
f. Other works	...	255 8 1	...	...	787 3 2	458 15 5	2,122 0 4	...	3,623 [illegible] 0
IX.—Miscellaneous—									
a. Refunds	...	32 9 11	...	...	...	...	...	...	32 9 11
b. Law charges	...	...	...	...	14 13 0	...	6 0 0	...	20 13 0
c. Other charges	23 8 6	252 7 3	63 3 0	...	66 3 0	6 12 0	59 10 0	30 8 6	602 4 3
Total A.—Conservancy and Works ...	33 8 6	62,822 5 6	7,056 13 9	24,621 7 3	18,012 14 8	2,993 4 6	8,288 14 10	11,769 15 6	1,35,599 [illegible] 6

CALCUTTA,
The 18th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 49—(*concluded*).

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Summary of revenue of the different divisions for 1880-81.

Budget heads.	Direction.	Kheri Division.	Bhira Sub-division.	Bahramghát Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhít Division.	Total.
B.—Establishments.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward, Total A., Conservancy and Works ...	33 8 6	62,822 5 6	7,056 13 9	24,621 7 3	18,012 14 8	2,993 4 6	8,288 14 10	11,769 15 6	1,35,599 4 6
I.—Salaries—									
a. Conservators	12,000 0 0	...	...	...	...	...	...	...	12,000 0 0
b. Superior officers	...	10,627 5 4	6,000 0 0	2,400 0 0	6,140 0 0	2,400 0 0	2,400 0 0	954 13 5	30,922 2 9
c. Subordinate forest and depôt establishment ...	...	4,746 8 1	1,432 0 0	352 0 0	3,010 0 4	1,571 15 10	4,558 1 3	703 4 0	16,373 13 6
d. Office establishments	1,528 5 2	2,553 1 11	47 12 3	309 10 10	825 14 11	360 0 0	680 15 6	501 9 5	6,807 6 0
e. Deputation and special allowances	...	...	...	...	...	...	...	...	...
II.—Travelling Allowances—									
a. Conservators	1,631 0 0	...	...	...	...	...	...	...	1,631 0 0
b. Superior officers	...	1 362 5 4	1,009 0 0	160 13 7	1,621 4 1	538 12 8	907 10 11	295 0 0	5,594 14 7
c. Subordinate forest and depôt establishments ...	...	722 14 11	260 10 3	...	441 15 1	223 7 8	...	184 13 6	1,833 13 5
d. Office establishments	444 14 3	591 5 11	12 8 2	...	336 13 9	81 9 10	276 9 2	130 8 3	1,874 5 4
III.—Contingencies—									
a. Stationery	5 1 6	44 12 0	14 8 0	1 10 0	28 6 6	8 11 4	7 8 3	17 1 0	127 10 7
b. Carriage of tents and records	228 9 3	91 6 6	65 3 0	...	177 13 7	71 8 0	75 8 0	61 0 0	771 0 4
c. Rents, rates and taxes	200 0 0	...	...	...	0 8 6	...	220 0 0	42 0 0	462 8 6
d. Pay of police guards	...	246 2 10	...	176 2 8	117 9 4	103 13 10	...	144 6 5	788 3 1
e. Office postage	174 3 0	55 4 0	34 10 6	45 1 6	94 2 0	31 3 6	68 8 6	48 7 0	551 8 0
f. Sundries	227 10 1	434 6 8	97 10 7	28 5 6	213 5 4	157 9 11	144 13 5	94 1 4	1,397 14 10
Total B., Establishments ...	16,439 11 3	21,475 9 6	8,973 14 9	3,473 12 1	13,007 13 5	5,548 17 7	9,339 11 0	3,177 0 4	81,436 4 11
Grand Total of Expenditure ...	16,473 3 9	84,297 15 0	16,030 12 6	28,095 3 4	31,020 12 1	8,542 1 1	17,628 9 10	14,946 15 10	2,17,035 9 5

Calcutta,
The 18th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 50.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Account current for the year 1880-81.

Heads of Account.		Rs. a. p.	Rs. a. p.
To cash balance		...	19,817 14 3
Revenue as per detail in annual summary		...	2,81,979 15 2
Service Funds.			
Uncovenanted Service Fund, Bengal		...	484 11 0
Deposits		...	100 0 0
Forest Cash Remittance, Local.			
Remittances from State Treasury		2,06,797 4 1	
Inter-divisions' transfers		7,751 12 1	2,14,549 0 2
Advances recoverable		...	2,28,532 10 8
Inter-departmental Transfers.			
Public Works Department		...	
Ditto ditto other Branches		250 6 0	
Military Department, Bengal		78 12 4	
Civil Departments.	Rs. a. p.		
Jails	1,104 7 3		
Mathematical Instrument Department ...	422 0 0		
Miscellaneous	176 8 0	1,702 15 3	2,032 1 7
Total ...		...	7,47,496 4 10

Heads of Account.		Rs. a. p.	Rs. a. p.
By expenditure as per detail in annual summary		...	2,17,035 9 5
Deposits		...	1,029 3 1
Forest Cash Remittance (Local).			
Remittances to State Treasuries		2,11,475 5 11	
Inter-divisional transfers		4,867 5 1	2,16,342 11 0
Advances recoverable		...	2,32,126 2 11
Suspense		...	0 10 0
Government of Bengal		...	29,259 10 4
Inter-departmental Transfers.			
Public Works Department, Muttra and Achnera State Railway ...		114 13 10	
Ditto ditto other branches		24,712 3 1	
Military Department, Bengal		14,164 6 7	
Civil Department.	Rs. a. p.		
Jails	6,720 2 4		
Miscellaneous	39 9 4	6,759 11 8	45,751 3 2
Cash balance		...	5,951 2 11
Total		...	7,47,496 4 10

FORM No. 51.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statement of outstandings and liabilities on account of contractors and disbursers during 1880-81.

Division.	*Department debtor.*			*Department creditor.*			*Balance due*	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings.)	By Department (liabilities.)
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Direction	...	1,518 3 3	1,518 3 3	371 4 2	1,918 3 8	2,289 7 10	771 4 7	...
Kheri	69 3 6	1,46,723 9 11	1,46,792 13 5	15,716 5 0	1,47,807 6 5	1,63,523 11 5	16,836 3 3	105 5 3
Bhira	0 0 11	10,108 0 5	10,108 1 4	151 8 7	11,237 12 0	11,389 4 7	1,281 3 3	...
Bahramghát ...	...	1,892 3 0	1,892 3 0	...	1,994 4 5	1,994 4 5	102 1 5	...
Bahraich	...	33,992 15 4	33,992 15 4	2,690 7 8	34,643 14 7	37,334 6 3	3,341 6 11	...
Gonda	...	6,309 9 0	6,309 9 0	418 1 5	6,885 5 1	7,303 6 6	993 13 6	...
Gorakhpur	...	10,116 4 7	10,116 4 7	1,614 0 7	9,347 3 6	10,961 4 1	844 15 6	...
Pilibhít	0 11 9	17,866 13 6	17,867 9 3	564 15 6	18,167 8 3	18,732 7 9	864 14 6	...
Total ...	70 0 2	*a.* 2,28,527 11 0	2,28,597 11 2	21,526 10 11	*b.* 2,32,001 9 11	2,53,528 4 10	25,035 14 11	105 5 3

Remarks.

A. Form No. 50 shows Rs. 4-15-8 more. This amount was omitted from the ledger in 1875, when Government sanctioned its being written off as irrecoverable; but as the corresponding write-back entries were not then made, the omission had to be supplied during this year, to agree the balances with the Accountant-General's books.

B. Amount shown in form No. 50 as debits—

	Rs. a. p.
Under "advances recoverable" ..	2,32,126 2 11
And shown in this form	2,32,001 9 11
Difference ..	124 9 0

In the accounts for March, 1879, this sum was credited under "advances recoverable," whereas it should have been shown as revenue. The error was rectified during 1880-81 by raising a debit for the amount under "advances recoverable."

Calcutta,
The 18th June, 1880.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 51—(*concluded*).

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statements of outstandings and liabilities on account of timber sales 1880-81.

Division.	Department debtor.			Department creditor.			Balance due		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Kheri Division.									
Executive Engineer, Sitapur Provincial Division	157 10 8	...	157 10 8	...	...	...	...	157 10 8	
Ordnance Department, Fatehgarh	567 6 2	6,359 13 0	6,927 3 2	...	6,927 3 2	6,927 3 2	...	...	
Other purchasers	...	1,047 2 2	1,047 2 2	9 8 2	1,048 0 8	1,057 8 10	10 6 8	...	
Bahramghát Division.									
Ordnance Timber Agent, Fatehgarh	4,404 8 6	...	4,404 8 6	...	...	...	...	4,404 8 6	
Resident Engineer, Oudh and Rohilkhand Railway, Bara Banki,	...	792 12 11	792 12 11	577 5 5	215 7 6	792 12 11	...	...	
Superintendent, Central Prison, Fatehgarh	2,630 13 0	...	2,630 13 0	...	2,442 2 8	2,442 2 8	...	188 10 4	
Ditto ditto, Bareilly	5,524 0 0	1,557 0 0	7,081 0 0	...	6,683 1 4	6,683 1 4	...	397 14 8	
Executive Engineer, Agra Canal Division	...	*589 7 9	589 7 9	210 12 4	378 11 5	589 7 9	...	...	* Rs. 16-11-0 written off as per Local Government sanction, No. 623, dated 16th June, 1880.
Ditto, Sitapur Provincial Division	...	8,940 0 9	8,940 0 9	16 1 10	8,923 14 11	8,940 0 9	...	...	
Chiranji Lal, Forest Ranger, Pilibhít	...	62 8 5	62 8 5	62 8 5	...	62 8 5	...	...	
Superintendent, Jail, Shâhjahânpur	...	†58 15 7	58 15 7	14 12 4	...	14 12 4	...	44 3 3	† Rs. 14-12-4 written off as per Local Government No. 600, dated 3rd June, 1880.
Manager, Kantit estate, Mirzapur	...	264 6 3	264 6 3	264 6 3	...	264 6 3	...	...	
Superintendent, District Jail, Allahabad	100 0 0	363 12 9	463 12 9	...	735 6 9	735 6 9	271 10 0	...	Since realized.
Ditto, Wingfield Garden, Lucknow	...	96 0 3	96 0 3	...	96 0 3	96 0 3	...	...	
Rae Bareli Provincial Division	...	9,808 5 0	9,808 5 0	...	10,420 13 8	10,420 13 8	612 8 8	...	Ditto.
Superintendent, Jail, Sitapur	...	5,656 10 10	5,656 10 10	...	5,656 10 10	5,656 10 10	...	...	
Resident Engineer, Oudh and Rohilkhand Railway, Lucknow ...	...	320 15 0	320 15 0	...	1,171 9 9	1,171 9 9	850 10 9	...	
Public Works Department, Lucknow Provincial Division ...	...	779 14 10	779 14 10	...	803 11 10	803 11 10	23 13 0	...	Ditto.
Ditto ditto, Fyzabad ditto ...	...	1,371 5 2	1,371 5 2	...	1,371 5 2	1,371 5 2	...	...	
Executive Engineer, Muttra and Achnera Railway ...	...	114 13 10	114 13 10	...	114 13 10	114 13 10	...	...	
District Engineer, Mirzapur, Department Public Works ...	...	304 4 3	304 4 3	...	304 4 3	304 4 3	...	...	
Resident Engineer, Oudh and Rohilkhand Railway, Shâhjahânpur,	...	414 7 2	414 7 2	...	414 7 2	414 7 2	...	...	
Mr. J. Woodburn, Deputy Commissioner, Fyzabad ...	...	152 4 0	152 4 0	...	152 4 0	152 4 0	...	...	
Executive Engineer, Narora Division, Lower Ganges Canal ...	...	936 12 2	936 12 2	...	1,426 0 3	1,426 0 3	489 4 1	...	Ditto.
Superintendent, Gun Carriage Factory, Fatehgarh ...	...	407 15 10	407 15 10	...	407 15 10	407 15 10	...	...	
Secretary, Municipal Committee, Benares	...	297 3 2	297 3 2	...	297 3 2	297 3 2	—	...	
Superintendent, Police, Bara Banki	...	15 0 0	15 0 0	...	15 0 0	15 0 0	...	...	
Mr. Monro, Contractor	...	1,200 0 0	1,200 0 0	...	643 2 4	643 2 4	...	556 13 8	
Mr. McCutchan, Muzaffarnagar	...	500 0 0	500 0 0	...	...	...	...	500 0 0	
Buldeo Parshad, Contractor, Allahabad	...	200 0 0	200 0 0	...	...	...	...	200 0 0	Since adjusted.
Bani Ram, Contractor, Etah	...	69 0 0	69 0 0	...	...	...	...	69 0 0	Ditto.
Total ...	13,384 6 4	42,680 15 1	56,065 5 5	1,155 6 9	50,649 6 9	51,804 13 6	5,258 5 2	6,518 13 1	

Naini Tál,
The 18th June, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 52.

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement of outstandings on account of revenue, 1880-81.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Kheri ...	Timber sales, grazing dues, and minor produce.	7,349 12 1	48,997 4 10	56,347 0 11	50,783 3 3	5,563 13 8	Rs. 157-10-8 received in advance.
Bhira Sub-division ...	Grazing dues and minor produce ...	596 2 0	7,808 4 2	8,404 6 2	7,175 2 2	1,229 4 0	
Bahramghát ...	Timber sales	1,145 14 7	1,12,449 13 10	1,13,595 12 5	1,11,347 13 11	2,247 14 6	Rs. 630 12-3 ditto.
Bahraich ...	Drift timber, grazing dues, and minor produce.	21,144 0 9	30,753 9 8	51,897 10 5	30,164 7 5	21,733 3 0	
Gonda ...	Grazing dues and minor produce ...	8,010 9 10	22,753 2 8	30,763 12 6	30,763 12 6	...	
Gorakhpur ...	Timber and other produce	2,008 8 4	42,768 1 5	44,776 9 9	43,118 4 9	1,658 5 0	Rs. 2,050 ditto.
Pilibhít (late Bareilly),	Ditto, ditto	2,734 3 0	8,854 3 5	11,588 6 5	9,024 6 8	2,563 15 9	
	Total ...	42,989 2 7	2,71,384 8 0	3,17,373 10 7	2,82,377 2 8	(a) 34,996 7 11	

	Rs. a. p.
From public Departments ...	2,247 14 6
„ other purchasers... ...	20,788 2 8
	23,036 1 2

	Rs. a. p.
(a) Realizations as per Form No. 49	2,81,979 15 2
Reductions allowed under explanations,	365 12 2
Written off under Government orders,	31 7 4
Total ...	2,82,377 2 8

CALCUTTA,
The 18th June, 1881.

A. L. HOME.
Assistant Comptroller-General (Forests).

FORM No. 53.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statement of trees felled during the year 1880-81.

Division.	Forest range.	Locality.	Description of timber.	On hand from previous year. No.	On hand from previous year. C. ft.	Felled during the year. No.	Felled during the year. C. ft.	Total. No.	Total. C. ft.	Disposed of during current year. How disposed of.	Disposed of during current year. No.	Disposed of during current year. C. ft	Closing balance. No.	Closing balance. C. ft	Remarks.
Bahraich. Khiri.	Niwalkher ...	Forest blocks bounded by Dudua Missan Khumb line and Dudua Chandun Chauki and forest south of Bhadraula.	Sál ...	...	...	2,006	80,240	2,006	80,240	Converted into logs.	2,006	80,240	...	...	2,006 trees converted into 2,089 logs, 839 useful pieces and 618 useless pieces.
			Sál ...	...	...	189	7,560	189	7,560		189	7,560	...	...	189 trees converted into 165 logs and 24 boats.
	Motipur ...	Sajauli forest ...	Sál ...	...	...	262	4,840	262	4,840		262	4,840	...	...	262 trees converted into 4 logs, 63 ballis, 82 rafters, and 113 saplings. Line felling.
			Sissu ...	...	...	10	120	100	120		1	21	9	99	
	Bhinga ...	Sections V., VI., VII., VIII,	Sál ...	...	...	69	...	69	...	Made into canoes...	69	...	...	...	
	Sonari and Nagwa...	Sonari forest ...	Sál ...	300	6,000	...	...	300	6,000	Sold and used up...	300	6,000	...	...	
Gorakhpur.	Gorakhpur ...	Forest ...	Sál saplings,	...	...	41,003	...	41,003	...	Sold locally ...	41,003	...	...	...	
			Hollow sál ...	...	...	19	...	19	...		19	...	...	...	
			Asna ...	...	...	37,921	...	37,921	...		37,921	...	...	...	
			Mohua ...	...	...	307	...	307	...		307	...	...	...	
			Jamun ...	...	...	1,809	...	1,809	...		1,809	...	...	...	
			Oukat ...	...	...	3,470	...	3,470	...		3,470	...	...	...	
			Kujrauta ...	...	...	32	...	32	...		32	...	...	...	
			Kusumb ...	...	...	140	...	140	...		140	...	...	...	
			Bel ...	...	...	3	...	3	...		3	...	...	...	
			Harra ...	...	...	1	...	1	...		1	...	...	...	
			Bahera ...	...	...	15	...	15	...		15	...	...	...	
			Jigna ...	...	...	6	...	6	...		6	...	...	...	
			Huldu kurma,	...	...	14	...	14	...		14	...	...	...	
			Panun ...	...	...	1	...	1	...		1	...	...	...	
			Pairoa ...	...	...	111	...	111	...		111	...	...	...	
		Total ...	...	300	6,000	87,388	92,760	87,688	98,760	...	87,679	98,661	9	99	

ABSTRACT.

Description of timber.	First class over 6 feet in girth.	Second class 6′ 4½″ in girth.	Third class 4½′ 3″ feet in girth.	Fourth class 3′ 1½″ feet in girth.	Under 1½ feet in girth.	Total of each kind of tree.	Remarks.
Sál	2,163	380	951	15,095	24,969	43,548	
Asna	1	...	...	8,717	29, 203	37,921	
Sissu	...	...	10	...	...	10	
Miscellaneous	126	47	340	453	4,943	5,909	
Total ...	2,290	427	1,301	24,255	59,115	87,388	

Naini Tal,
The 1st July, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 54.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statement of logs, sleepers, and other scantlings cut and exported during the year 1880-81.

Forest range.	Locality.	Description of timber and scantlings.	On hand from previous year. No.	On hand from previous year. C. ft.	Cut or received during current year. No.	Cut or received during current year. C. ft.	Total. No.	Total. C. ft.
Kheri (Trans-Sarda). Niwalkhar ...	Forest block between Dudua Mussan Khumb, Dudua Chundun chauki, and Dudua Chandpara and Niwulkhar line.	Sál ...	3,642	163,530	3,546	141,840	7,188	305,370
		Asna ...	642	23,000	...	...	642	23,000
Khairigarh ...	Forest block between Bhadi Tal and Bilrain Dih.	Sal ...	2,790	111,600	...	...	2,790	111,600
		Asna ...	108	4,320	30	1,200	138	5,520
Niwulkhar ...	Suthiana Depôt ...	Logs ...	3,631	145,240	468	18,720	4,132	165,280
		" ...	27	1,080	6	240		
	Dudua	" ...	1,222	48,880	2,595	103,800	3,817	152,680
	Dumuhani	" ...	...	...	19	760	19	760
		Karris ...	...	...	288	288	288	288
Khairigarh ...	Khairigarh ...	Logs ...	111	4,440	34	1,360	145	5,800
		Fuel ...	...	...	maunds	166	maunds	166
	Ramnagar ...	Logs ...	46	1,840	3	120	49	1,960
	Shitaba ...	" ...	...	...	3,721	148,840	3,721	148,840
	In transit ...	" ...	926	37,040	...	...	926	37,040
Bahramghát. Bahramghát,	Bahramghát Depôt ...	Sál logs...	224	11,868	2,073	98,181	2,297	110,049
		Asna " ...	847	46,544	50	2,863	897	49,407
		Deodar " ...	3	140	...	...	3	140
		Sál scantlings.	2,32,706 and 10 stacks	24,498	94,830	50,760	327,536 and 10 stacks	75,258
	Carried over ...	...	246,925 and 10 stacks	624,020	1,07,663 mds.	568,972 and 166	354,588 and 10 stacks	11,92,992 and mds. 166

Disposed of during the year. How disposed of		No.	C. ft.	Closing balance. No.	Closing balance. C. ft.
Carted to Suthiana	467	3,920	156,800	3,268	148,570
" Dudua	2,586				
" Dumuhani	19				
Useless pieces unremoved ...	848				
Carted to Suthiana ...	6	362	14,480	280	8,520
Useless pieces ...	356				
Carted to Khairigarh ...	34	34	1,360	2,756	110,240
... ...	...	...	...	138	5,520
Transferred to Bhira ...	41	632	25,280	3,500	140,000
Sawn up for works ...	17				
Sold to purchasers ...	14				
Rafted	560				
Transferred to Bhira ...	7	3,059	122,360	758	30,320
Sold	6				
Sawn up for works ...	37				
Rafted	3,009				
Sold	19	19	760	...	...
Used up on works	39	39	39	249	249
Rafted	134	134	5,360	11	440
... ...	...	...	...	maunds	166
Sold	20	49	1,960	...	...
Rafted	29				
Sawn up for works... ...	3	2,292	91,680	1,429	57,160
Rafted	2,289				
Reached	24	682	27,980	244	9,760
Adjusted in previous year ...	654				
Cut up for indent	601 = 30,123	1,784	85,643	513	24,406
" " Patna contract	297 = 11,961				
" " saw-mill	633 = 32,316				
Sold	14 = 751				
" by auction	239 = 10,492				
Cut up for indents	143 = 7,757	478	26,895	419	22,512
" " saw-mill	49 = 2,324				
Sold to purchasers	88 = 5,622				
" by public auction	198 = 11,192				
Cut up for indents	2 = 66	2	66	1	74
Supplied on indents	62,568 = 18,275	139,472 39d 6 stacks	65,157	188,064 and 4 stacks	10,101
Sold by auction	52,847 = 24,800				
Given to saw-mill to be re-sawn.	10,506 = 11,359				
Used by Department	2,134 = 391				
Burnt in engine	5,417 = 3,018				
Transferred to Kheri	203 = 249				
Sent to Lucknow Depôt	5,899 = 7,065				
...		152,958 and 6 stacks	625,120	201,630 and 4 stacks	567,872 and mds. 166

FORM No. 54—*(concluded).*

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statement of logs, sleepers, and other scantlings cut and exported during the year 1880-81.

Forest range.	Locality.	Description of timber and scantlings.	On hand from previous year. No.	On hand from previous year. C.ft.	Cut or received during current year. No.	Cut or received during current year. C. ft.	Total. No.	Total. C.ft.	Disposed of during current year. How disposed of.	Disposed of during current year. No.	Disposed of during current year. C. ft.	Closing balance. No.	Closing balance. C. ft.
Bahramghát—(concluded).	Brought forward ...	...	2,46,925 and 10 stacks	624,020	1,07,663 mds.	568,972 and mds. 166	3,54,588 and 10 stacks	1,192,992 and mds. 166	...	152,958 and 6 stacks	625,120	2,01,630 and 4 stacks	567,872 and mds. 166
Bahramghát ...	Bahramghát Depôt, ...	Asna scantlings.	120	262	10,612	6,580	10,732	6,842	Supplied on indents ... 5,764 = 3,224 Sold by auction ... 4,356 = 2,637 Given to saw-mill to be re-sawn ... ... 544 = 883 Used by Department ... 34 = 78 Burnt in engine ... 34 = 20	10,732	6,842	...	...
		Deodar ...	...	...	57	48	57	48	Sold ... 32 = 25 Used by Department ... 25 = 23	57	48	...	...
		Sál round pieces of logs.	666	13,686	1,772	27,225	2,438	40,911	Sold by auction ... 850 = 6,552 Sold by Opium Agent, Behar 1,338 = 27,106 Cut up for saw-mill ... 154 = 1,745 Deduction in measurements by Opium Agent ... ... = 2,525 Cut up for indents ... 55 = 2,092	2,397	40,020	41	891
		Asna ...	...	...	351	1,625	351	1,625	Sold by auction ... 347 = 1,480 Sold to purchasers ... 4 = 145	351	1,625	...	...
		Sál offcuts...	...	...	...	3,724 Mds.	...	3,724 Mds.	Ditto ... 1,240 Sent to Lucknow Depôt ... 2,484	...	3,724 mds.	...	...
		Ditto ...	...	...	...	3,020 Mds.	...	3,020 Mds.	Sold to purchasers ... Mds. 521 Sent to Lucknow Depôt ... Do. 2,498	...	3,020 mds.	...	...
		Asna offcuts,	...	...	...	54	...	54	Sold to purchasers ... Mds. 4 Sent to Lucknow Depôt ... Do. 50	...	54	...	...
		Ballis ...	2,356	...	4	...	2,360	...	Sold to purchasers ... 1,509 Used by Department ... 67 Broken in dragging logs ... 119 Sent to Patna with rafts ... 102	1,797	...	563	...
		Large boats,	54	...	...	...	54	...	...	...	...	54	...
		Canoes ...	4	...	1	...	5	...	...	...	...	5	...
	Lucknow Depôt ...	Sál scantlings	166	152	5,897	7,065	6,063	7,217	Sold to purchasers ... 5,558 = 3,320 Sold by auction ... 337 = 3,749	5,935	7,069	128	148
		,, offcuts...	...	...	...	2,484 Mds.	...	2,484 Mds	Ditto ... 2,484	...	2,484 mds.	...	...
		Ditto ...	...	...	...	2,499 Mds.	...	2,499 Mds.	Sold to purchasers ... Mds. 2,499	...	2,499 mds.	...	...
		Asna offcuts,	...	...	...	50	...	5	Ditto ... ditto	...	50	...	...
Go-rakhpur. Gorakhpur ...	Sonari ...	Sál logs ...	300	6,000	...	...	300	6,000	Sold ... 144 Used by Department ... 16 Lost in transit ... 140	300	6,000	...	...
		Total ...	2,50,591 and 10 stacks	644,120	1,26,357 mds.	617,723 5,789	3,76,948 and 10 stacks	1,261,843 C.ft. and 5,789 maunds		1,74,527 and 6 stacks	692,932 and 5,623 mds.	2,02,421 and 4 stacks	568,911 and 166 mds.

Naini Tal:
The 7th July, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 55.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Statement of timber and other produce brought to Depôt from the different Forest Divisions, 1880-81.

Division.	Forest.	Description of timber, &c.	Number of		Total of each division.		Remarks.
			Pieces.	Cubic feet.	Pieces.	Cubic feet.	
Kheri ...	Niwulkhar ...	Sál logs ...	3,074	122,960	...	...	
		Asna logs ...	6	240	3,080	123,200	
	Khairigarh ...	Sál logs ...	34	1,360	34	1,360	
		Canoes ...	121	...	121	...	
Gorakhpur ...	Nagwa ...	Charcoal ...	Maunds	$907\frac{11}{20}$	Maunds	$907\frac{11}{20}$	
	Sonari ...	Boats ...	1	...	1	...	
		Sál logs ...	144	...	144	...	
		Total ...	...	...	3,380	124,560 $907\frac{11}{20}$	Maunds.

Thirty-three sal, 2 asna logs and 2 large boats and 3 canoes recovered from river, and one log not taken by purchaser and 288 confiscated karris and 166 maunds firewood are not shown in this form, though brought on stock in form No. 56 as received during the year.

Naini Tal :
The 7th July, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 56.

Forest Department, Oudh Circle, North-Western Provinces and Oudh.

Account of timber and other produce, 1880-81.

Particulars.		Pieces.		Total.		Remarks.
		Number.	Cubic feet.	Number.	Cubic feet.	
Balance in hand at commencement of year.						
Kheri Division...	Sál logs	4,912	...	...	...	
	Asna	392	...	...	...	
	Charcoal	Maunds	597	...	...	
	Fuel	Maunds	4,900	...	...	
	Large boats	34	...	...	...	
	Canoes	450	...	...	...	
Bahramghát Division.	Sál logs	224	...	...	...	
	Ditto (in transit)... ...	578	...	...	...	
	Asna logs	847	...	...	...	
	Ditto (in transit)... ...	80	...	...	...	
	Deodar logs	3	...	...	...	
	Sál scantlings	...	24,498	...	...	
	Asna ditto	...	262	...	...	
	Sál offcuts and pieces ...	...	13,686	...	...	
	Ballis	2,356	...	...	...	
	Ditto (in transit)... ...	76	...	...	...	
	Canoes	4	...	...	...	
	Large boats	54	...	...	...	
Lucknow Depôt,	Sál scantlings	...	152	...	...	
Bahraich Division.	Canoes	504	...	...	...	
	Fuel	Maunds	$8,036\frac{13}{20}$	...	...	
Gorakhpur Division.	Koras and golas, &c. ...	1,685	...	...	...	
	Total ...	...	...	12,200	38,598 $12,633\frac{13}{20}$	Cubic feet. Maunds.

FORM No. 56—(continued).

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account of timber and other produce, 1880-81.

Particulars.		Pieces. No.	Pieces. Cubic feet.	Total. No.	Total. Cubic feet.	Remarks.
Received during the year.						
KHERI DIVISION,	Logs and pieces (forest) ...	3,108	...	...	...	
	Sál logs (river)	33	...	...	...	
	Ditto brought back to depôt ...	1	...	...	...	
	Asna logs (forest)	6	...	...	...	
	Ditto (river)	2	...	...	...	
	Confiscated sál karris ...	288	...	...	...	
	Canoes (forest)	121	...	...	...	
	Ditto (river)	3	...	...	...	
	Large boats (river)	2	...	...	...	
	Sál scantlings	...	249	...	...	
	Fuel	Maunds	166	...	...	
	Poles	3	...	...	...	
BHIRA SUB-DIVISION.	Sál logs	48	...	...	...	
BAHRAMGHÁT DIVISION.	Sál logs	2,048	...	...	...	
	Ditto purchased from Nipal ...	25	...	...	...	
	Asna logs	50	...	...	...	
	Sál scantlings	...	50,760	...	...	
	Asna ditto	...	6,580	...	...	
	Deodar ditto	...	48	...	...	
	Sál round pieces of logs ...	...	27,225	...	...	
	Asna ditto	...	1,625	...	...	
	Sál offcuts	...	3,724	...	...	
	Ditto	Maunds	3,920	...	...	
	Ballis	4	...	...	...	
	Asna offcuts	Maunds	54	...	...	
	Canoes	1	...	...	...	
LUCKNOW DEPÔT,	Sál scantlings	...	7,065	...	...	
	Ditto offcuts	...	2,484	...	...	
	Ditto	Maunds	2,499	...	...	
	Asna offcuts	Maunds	50	...	...	
BAHRAICH DIVISION.	Canoes	2	...	...	...	
GORAKHPUR DIVISION.	Sál logs	144	...	...	...	
	Charcoal	Maunds	$907\frac{11}{20}$	...	...	
	Boats	1	...	...	...	
	Total ...	...	...	5,890	99,760	Cubic feet.
					$6,696\frac{11}{20}$	Maunds.
Removed by purchasers.						
KHERI DIVISION ...	Sál logs	54	...	...	...	
	Canoes	43	...	...	...	
BAHRAMGHÁT DIVISION.	Sál logs	253	...	...	...	
	Asna logs	286	...	...	...	
	Sál scantlings	...	43,075	...	...	
	Asna ditto	...	5,861	...	...	
	Deodar ditto	...	25	...	...	
	Sál round pieces of logs ...	...	33,658	...	...	
	Asna ditto ...	...	1,625	...	...	
	Sál offcuts	...	1,240	...	...	
	Ditto	Maunds	521	...	...	
	Asna offcuts	"	4	...	...	
	Ballis	1,509	...	...	...	
LUCKNOW DEPÔT,	Sál scantlings	...	7,069	...	...	
	Ditto offcuts	...	2,484	...	...	
	Ditto	Maunds	2,499	...	...	
	Asna offcuts	"	50	...	...	
BAHRAICH DIVISION.	Canoes	24	...	...	...	
GORAKHPUR DIVISION.	Sál logs	144	...	...	...	
	Ballas	15	...	...	...	
	Golas	2	...	...	...	
	Boat	1	...	...	...	
	Charcoal	Maunds	$907\frac{11}{20}$	...	...	
	Total ...	...	...	2,331	95,037	Cubic feet.
					$3,981\frac{11}{20}$	Maunds.

FORM No. 56—(*concluded*).

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account of timber and other produce, 1880-81.

Particulars.		Pieces. Number.	Pieces. Cubic feet.	Total. Number	Total. Cubic feet	Remarks.
Lost or used by department.						
KHERI DIVISION ...	Sál logs	291	...	...	...	
	Asna logs	22	...	...	...	
	Sál karris (confiscated) ...	39	...	...	...	
	Sál scantlings	...	249	...	...	
	Charcoal	Maunds	50	...	...	
	Fuel	"	4,000	...	...	
	Canoes	14	...	...	...	
BHIRA SUB-DIVISION.	Sál logs	48	...	...	...	
BAHRAMGHÁT DIVISION.	Sál logs	2,109	...	...	...	
	Asna logs	272	...	...	...	
	Sál scantlings	...	3,409	...	...	
	Ditto	...	11,359	...	...	
	Asna scantlings	...	981	...	...	
	Deodar ditto	...	23	...	...	
	Sál round pieces of logs ...	...	3,837	...	...	
	Sál profit and loss	...	2,525	...	...	
	Deodar logs	2	...	...	...	
	Ballis	364	...	...	...	
	Total ...	...	...	3,161	22,383 4,050	Cubic feet. Maunds.
Otherwise removed (these are merely transfers from one Division to another) and the items are included under "received during the year."						
KHERI DIVISION ...	Sál logs	2,048	...	...	...	
	Ditto	48	...	...	...	
	Asna logs	50	...	...	...	
	Ballis	3	...	...	...	
BAHRAMGHÁT DIVISION.	Sál scantlings	...	249	...	...	
	Ditto	...	7,065	...	...	
	Sál offcuts	...	2,484	...	...	
	Ditto	Maunds	2,499	...	...	
	Asna offcuts	"	50	...	...	
BAHRAICH DIVISION.	Canoes	10	...	...	...	
	Total ...	...	...	2,159	9,798 2,549	Cubic feet. Maunds.
Balance in hand at close of year.						
KHERI DIVISION ...	Sál logs	5,374	...	...	...	
	Ditto (in transit)	239	...	...	...	
	Asna ditto	325	...	...	...	
	Ditto (in transit)	4	...	...	...	
	Karris confiscated	249	...	...	...	
	Charcoal	Maunds	547	...	...	
	Fuel	"	166	...	...	
	Large boats	36	...	...	...	
	Canoes	517	...	...	...	
BAHRAMGHÁT DIVISION.	Sál logs	513	...	...	...	
	Asna	419	...	...	...	
	Deodar	1	...	...	...	
	Sál scantlings	...	10,101	...	...	
	Sál round pieces	...	891	...	...	
	Ballis	563	...	...	...	
	Large boats	54	...	...	...	
	Canoes	5	...	...	...	
LUCKNOW DEPÔT,	Sál scantlings	...	148	...	...	
BAHRAICH DIVISION.	Canoes	472	...	...	...	
	Fuel	Maunds	$8,036\frac{13}{20}$	...	...	
GORAKHPUR DIVISION.	Sál ballas	1,515	...	...	...	
	Do. koras	19	...	...	...	
	Do. golas	134	...	...	...	
	Total ...	...	...	10,439	11,140 $8,749\frac{13}{20}$	Cubic feet. Maunds.

NAINI TAL,
The 15th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

FORM No. 59.

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Statement showing the revenue derived from and expenditure incurred on timber and other produce sold to Public-Departments during the year 1880-81.

Description of supplies.		Rate.		Amount of revenue.			Cost Forest Department.			Comparison of revenue and expenditure.		Remarks.
		At	Per	Due.	Received.	Outstanding.	Timber expenses under A. I.	Quota of all other expenditure chargeable against timber, &c.	Total.	Surplus.	Deficit.	
KHERI DIVISION.	Cubic feet.	Rs. a. p.	Cubic feet.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Sál logs	2,455 8 4	2 0 0	...	4,917 3 2	4,917 3 2	...	140 0 0	374 0 0	514 0 0	4,403 0 0	...	
Total ...	2,455 8 4	...	...	4,917 3 2	4,917 3 2	...	140 0 0	374 0 0	514 0 0	4,403 0 0	...	
BAHRAMGHÁT DIVISION.												
Sál scantlings	15,545 1 6	1 15 3¼	ditto ...	30,379 12 7	28,155 11 1	2,224 0 0						
Asna ditto	2,028 9 0	1 12 1¾	ditto ...	3,570 6 9	3,546 9 9	23 13 0						
Piece of sál logs	27,105 6 0	1 1 2¾	ditto ...	29,236 0 7	29,236 0 7	...	24,621 0 0	3,474 0 0	28,095 0 0	35,422 0 0	...	
Ballis, No.	1,377 0 0	0 2 8	Ballis ...	231 4 0	231 4 0	...						
Sál offcuts, maunds	300 0 0	0 5 4	Maunds,	100 0 0	100 0 0	...						
Cubic feet ...	44,679 4 6	...	...	63,517 7 11	61,269 9 5	2,247 14 6	14,621 0 0	3,474 0 0	28,095 0 0	35,422 0 0	...	
Total No. ...	1,377 0 0											
Maunds ...	300 0 0											
Grand Total ... Cubic feet ...	47,135 0 10	...	...	68,434 11 1	66,186 12 7	2,247 14 6	24,761 0 0	3,848 0 0	28,609 0 0	39,825 0 0	...	
Grand Total ... No. ...	1,377 0 0											
Grand Total ... Maunds ...	300 0 0											

NAINI TAL,
The 15th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh. Circle, N-W.P. and Oudh.

FORM No. 60.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of timber and of live and dead stock for the year 1880-81.

Description of timber and other stocks.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of and lost during the year, and allowances for depreciation.		On hand at close of year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
DIRECTION DIVISION.		Rs.		Rs.		Rs.		Rs.		Rs.	
3. Tools	1	1	...	...	1	1	...	...	1	1	
4. Office furniture	50	119	2	10	52	129	...	...	52	129	
5. Tents and equipages	7	210	...	...	7	210	...	...	7	210	
7. Miscellaneous	4	4	...	...	4	4	...	...	4	4	
Total ...	62	334	2	10	64	344	...	...	64	344	
PILIBHIT DIVISION.											
Live Stock.											
Elephant	...	...	1	2,300	1	2,300	...	...	1	2,300	
Bullock	...	...	4	160	4	160	...	...	4	160	
1. Instruments	...	...	17	8	17	8	...	...	17	8	
2. Machinery	...	...	2	31	2	31	...	...	2	31	
3. Tools	102	59	19	26	121	85	35	28	86	57	
4. Office furniture	11	49	6	10	17	59	...	...	17	59	
5. Tents and equipages	5	86	...	...	5	86	...	...	5	86	
7. Miscellaneous	64	124	61	122	125	246	5	61	120	185	
Country carts	...	...	2	80	2	80	...	...	2	80	
Buildings	...	...	5	2,500	5	2,500	...	...	5	2,500	
Total ...	182	318	117	5,237	299	5,555	40	89	259	5,466	
BHIRA SUB-DIVISION.											
Live Stock.											
Elephant	1	3,000	...	...	1	3,000	1	3,000	...	...	
Bullocks	...	...	4	160	4	160	...	...	4	160	
1. Surveying and other instruments	2	50	14	30	16	80	...	...	16	80	
3. Tools	134	26	26	24	160	50	38	10	122	40	
4. Office furniture	18	103	27	19	45	122	5	34	40	88	Transfer to other head.
5. Tents and equipages	10	276	...	...	10	276	2	27	8	249	Very old.
6. Building materials, small stores, and house fittings ...	81	146	42	19	123	165	52	1	71	164	Used up and transferred to other head.
7. Miscellaneous	83	155	24	7	107	162	...	...	107	162	
Country carts	...	...	2	80	2	80	...	...	2	80	
Buildings	1	4,000	3	5,000	4	9,000	...	...	4	9,000	
Total ...	330	7,756	142	5,339	472	13,095	98	3,072	374	10,023	

FORM No. 60—(*continued*).

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Abstract showing the value of timber and of live and dead stock for the year 1880-81.

Description of timber and other stock.	On hand at commencement of year.		Received during the year.		Total.		Sold, otherwise disposed of and lost during the year, and allowances for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
		Rs.		Rs.		Rs.		Rs.		Rs.	
KHERI DIVISION.											
Suthiana Depôt logs	3,658	54,870	474	7,110	4,132	61,980	632	9,480	3,500	52,500	
Dudua ditto	1,222	24,440	2,595	51,900	3,817	76,340	3,059	61,180	758	15,160	
Dumuhani ... logs	...	...	19	380	19	380	19	380	...	...	
Dumuhani ... karris	...	...	288	288	288	288	39	39	249	249	
Khairigarh Depôt logs	111	3,469	34	850	145	4,319	134	4,044	11	275	
Shetaba ditto	...	...	3,721	1,11,630	3,721	1,11,630	2,292	68,760	1,419	42 870	
Ramnagar ditto	46	1,380	3	40	49	1,420	49	1,420	...	...	
Large boats	34	13,600	2	600	36	14,200	...	...	36	14,200	Two recovered from river.
Canoes	450	9,000	124	4,480	574	13,480	57	1,140	517	12,340	
Live Stock.											
Elephant	3	9,600	1	4,300	4	13,900	1	2,300	3	11,600	
Bullocks	8	200	...	...	8	200	...	...	8	200	
Buffaloes	12	120	...	...	12	120	2	20	10	100	
Dead Stock.											
1. Surveying and other instruments	13	695	...	...	13	695	...	...	13	695	
3. Tools	2,227	1,653	...	16	2,227	1,668	...	7	2,227	1,661	
4. Office furniture	271	837	...	85	271	922	1	1	270	921	
5. Tents	12	437	...	...	12	437	3	125	9	312	
6. Building materials and house fittings	...	859	...	206	...	1,065	...	124	...	941	
7. Miscellaneous	186	1,084	...	264	186	1,348	...	335	186	1,013	
Country carts	10	200	...	...	10	200	...	...	10	200	
Buildings	6	19,500	1	2,800	7	22,300	...	...	7	22,300	
Total ...	8,269	1,41,948	7,262	1,84,949	15,531	3,26,892	6,288	1,49,355	9,243	1,77,537	
BAHRAMGHAT DIVISION.											
Sál logs	224	10,080	2,073	73,635	2,297	83,715	1,784	65,411	513	18,304	
Asna logs	847	15,881	50	897	897	16,778	478	9,743	419	7 035	
Deodar	3	270	...	...	3	270	2	140	1	130	
Sál scantlings ... ... cubic feet	24,498	18,374	50,760	50,760	75,258	69,134	65,157	61,559	10,101	7,575	
Ditto, Lucknow Depôt	152	114	7,065	1,758	7,217	1,872	7,069	1,759	148	113	
Asna scantlings, Bahramghat Depôt	262	196	6,580	6,580	6,842	6,776	6,842	6,776	...	...	
Deodar ditto ditto	26	52	48	96	74	148	74	148	...	...	
Sál offcuts and pieces of logs	13,886	6,843	34,965	26,223	48,851	33,066	47,960	32,621	891	445	
Asna ditto ditto	...	...	1,691	472	1,691	472	1,691	472	...	...	
Sál rejected timber	...	...	...	...	...	...	...	...	...	...	
Fuel	...	...	...	...	...	...	...	...	...	...	

Charcoal, ... maunds	...	...	...	...	...	...	...	...	...	...	
Boiler ash	...	...	...	...	...	...	...	...	...	...	
Ballis	2,356	442	4	1	2,360	443	1,797	338	563	105	
Large boats	54	27,000	...	...	54	27 000	...	...	54	27,000	
Canoes	4	80		20	5	100	...	...	5	100	
Live Stock.											
Buffaloes	10	100	...	...	10	100	...	...	10	100	
Dead Stock.											
1. Surveying instruments	...	...	49	121	49	121	...	...	49	121	
2. Machinery	24	27,000	...	...	24	27,000	...	...	24	27,000	
3. Tools	342	1,404	49	70	391	1,474	14	10	377	1,464	
4. Office furniture	68	263	11	100	79	363	1	4	78	359	Transferred to Direction Office.
6. Building materials, small stores, and house fittings ..	6	16	...	...	6	16	...	...	6	16	
7. Miscellaneous	...	796	...	964	...	1,760	...	1,332	...	428	
Timber transport cart, "Angarh"	1	50	...	...	1	50	...	...	1	50	
Country carts	5	50	...	...	5	50	...	...	5	50	
Total ...	3,944	1,09,011	2,237	1,61,697	6,181	2,70,708	4,076	1,80,313	2,105	90,395	
Bahraich Division.											
Fuel	8,036	844	...	...	8,036	844	...	...	Mds.8,036	844	Removed by Commissariat Department, but account not yet settled.
Large boats	3	1,500	...	...	3	1,500	...	...	3	1,500	At Bahramghát Depôt.
Canoes	504	10,060	2	60	506	10,120	34	1,020	472	9,100	Sold 24 for Rs 760 and 10 returned to Kheri.
Live Stock.											
Elephants	2	3,600	...	...	2	3,600	...	...	2	3,600	
Buffaloes	2	20	...	...	2	20	1	10	1	10	One died.
Dead Stock.											
1. Surveying and other instruments	21	177	24	182	45	359	...	...	45	359	
3. Tools	870	534	99	34	969	568	35	8	934	560	Used up.
4. Office furniture	183	442	18	35	201	477	..	...	201	477	
5. Tents	14	470	16	311	30	781	...	...	30	781	
6. Building materials, &c.	93	85	75	59	168	144	1	30	167	114	One mortar-mill lent by Public Works Department returned.
7. Miscellaneous	52	90	20	54	72	144	...	...	72	144	
Buildings	9	15,0 0	...	...	9	15,000	...	...	9	15,000	
Total ...	1,753	32,822	254	735	2,007	33,557	71	1,068	1,936	32,489	
Gonda Division.											
Sál scantlings	494	10	...	...	494	10	...	...	494	10	
,, pieces	2	1	...	..	2	1	...	...	2	1	
,, ballis	12	6	...	...	12	6	...		12	6	
Live Stock.											
Elephant	1	2,000	...	...	1	2,000	...	...	1	2,000	
Dead Stock.											
1. Surveying and other instruments	1	25	...	...	1	25	...	...	1	25	
3. Tools	302	236	...	...	302	236	...	...	302	236	
4. Office furniture	43	265	...	...	43	265	...	...	43	265	
5. Tents	2	200	...	...	2	200	...	...	2	200	
6. Buildings	14	5	...	...	14	5	...	...	14	5	
7. Miscellaneous	2	2	...	...	2	2	...	...	2	2	
Total ...	873	2,750	...	...	873	2,750	...	...	873	2,750	

FORM No. 60—(*concluded*).

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Abstract showing the value of timber and of live and dead stock for the year 1880-81.

Description of timber and other stocks.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of and lost during the year, and allowances for depreciation.		On hand at close of year.		Cause of loss and other particulars.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
GORAKHPUR DIVISION.		Rs.		Rs.		Rs.		Rs.		Rs	
Timber	1,685	718	144	920	1,829	1,636	161	951	1,668	685	
Live Stock.											
Elephant	1	2,000	...	...	1	2,000	...	...	1	2,000	
Dead Stock.											
1. Surveying and other instruments	8	43	5	60	13	103	...	...	13	103	
2. Tile machinery	...	...	1	150	1	150	...	...	1	150	
3. Tools	124	80	9	48	133	128	...	...	133	128	
4. Office furniture	35	150	19	61	54	211	2	10	52	201	Broken into pieces.
5. Tents	5	400	...	...	5	400	...	...	5	400	
7. Miscellaneous	132	80	2	9	134	89	2	8	132	81	
Buildings	4	4,000	1	800	5	4,800	1	1,000	4	3,800	Bataura hut was burnt in Mr. Allen's time.
Total ...	1,994	7,469	181	2,048	2,175	9,517	166	1,969	2,039	7,548	
GRAND TOTAL ...	17,407	3,02,403	10,195	3,60,015	27,602	6,62,418	10,739	3,35,866	16,863	3,26,552	

NAINI TAL,
The 16th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

SUPPLEMENT TO FORM No. 60.

FOREST DEPARTMENT, OUDH CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Showing value of timber stock, 1880-81.

KHERI DIVISION.			Rs. a. p.		Rs. a. p.		Rs. a. p.	Rs. a. p.
Suthiana Depôt	Logs	3,500 @ 40 cubic feet.	@ 0 6 0	per cubic foot	52,500 0 0			
Dudua "	"	758 @ 40 " "	@ 0 8 0	" " "	15,160 0 0			
Dumuhani "	Karris	249 @ 1 " "	@ 1 0 0	" " "	249 0 0		1,16,183 10 4	
Khairigarh "	Logs	11 @ 40 " "	@ 0 10 0	" " "	275 0 0			
" "	Firewood, maunds ...	166 ... " "	@ 10 8 0	" 100 maunds	17 6 4			
Shetabah "	Logs	1,429 @ 45 " "	@ 0 12 0	" cubic foot ... ... "	48,357 4 0			
In transit "	"	244 ...	Not valued	... ...	...			
Bahramghát "	" sál	513 @ 45 " "	@ 1 0 0	" " "	23,085 0 0			
" "	" asna	419 @ 50 " "	@ 0 6 0	" " "	7,856 4 0			
" "	" deodar	1 @ 74 " "	@ 2 0 0	" " "	148 0 0			
" "	Scantlings, sál ...	10,101 " "	@ 0 12 0	" " "	7,575 12 0		49,944 8 1	
" "	Round pieces, sál ...	891 " "	@ 0 8 0	" " "	445 8 0			
Lucknow "	Scantlings " ...	148 " "	@ 0 12 0	" " " —	111 0 0			
Bahramghát "	Ballis	563 " "	@ 0 3 0	each	105 9 0			
Gorakhpur Division	Koras and golas ...	1,668 ...	@ 20 0 0	per 100	333 9 7		333 9 7	
Bahraich "	Canos	472 ...	@ 20 0 0	each	9,440 0 0		10,283 13 6	
" "	Firewood, maunds ...	8,036 13/8 ...	@ 10 8 0	per 100 maunds	843 13 6			
At the edge of forest	Charcoal " ...	547	Not valued	... ...	...			
				Total value ...	...		1,76,745 9 5	

	Rs.	a.	p.
Value of timber stock, 1879-80	1,47,619	9	6
" " 1880-81	1,76,745	9	5
Increase ...	29,125	15	11

NAINI TAL,
The 17th July, 1881.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

APPENDIX.

APPENDIX.

Forest Department, Oudh Circle, North-Western Provinces and Oudh,

List of buildings, 1880-81.

No.	Division.	Names.	Property of	Rent when occupied per month.	Amount paid by officer during the year.
					Rs. a. p.
1	Pilibhít ...	Forest 3rd class rest-house, Mahofe ...	Forest Department.		
2	"	" " " " Chargatia ...	"		
3	"	" " " " Mustafabad ...	"		
4	"	" " " " Burua Kuhára ...	"		
5	"	" " " " Haripur ...	"		
6	Bhira Sub-division.	" 1st " " Gola ...	"		
7	"	" " " " Murha ...	"		
8	"	" 3rd " " Do. ...	"		
9	"	" " " " Kishenpur ...	"		
10	Kheri ...	Head quarters, Lakhimpur office and rest-house,	"	Rs. 25 by officer and Rs. 25 by office.	123 5 3
	"				
	"				
11	"	Forest 1st class rest-house, Suthiana ...	"		
12	"	" " " " Fort Gaurishah ..	"		
13	"	" " " " Shitabaghát ...	"		
14	"	" " " " Bilram Dih ...	"		
15	"	" " " " Dudua ...	"		
16	"	" 2nd " " Sunaripur ...	"		
17	Bahramghát	Timber Depôt ... Bahramghát ...	"		
18	"	Ditto ... ... Ditto ...	"		
19	Bahraich ...	Headquarters, Bahraich office and rest-house...	"	Rs. 30 by officer and Rs. 20 by office.	105 0 0
20	"	Forest 1st class rest-house, Nishangura ...	"		
21	"	" 2nd " " Sujauli ...	"		
22	"	" 1st " " Motipur ...	"		
23	"	" 3rd " " Charda ...	"		
24	"	" " " " Kakardari ...	"		
25	"	" " " " Bhinga ...	"		
26	"	" " " " Motipur ...	"		
27	"	" " " " Khurraincha ...	"		
28	Gonda ...	" " " " Bhagwanpur ...	"		
29	"	" " " " Chandarpur ...	"		
30	Gorakhpur ...	" 2nd " " Chauk ...	"		
31	"	" 3rd " " Ramgarh ...	"		
32	"	" 2nd " " Sukhui ...	"		
33	"	" " " " Daibbar ...	"		
		Total ...	...	...	228 5 3

Naini Tal,
The 17th July, 1881.

E. WOOD, Captain,
Conservator of Forests, Oudh Circle, N.-W. P. and Oudh.

SCHOOL CIRCLE REPORT.

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SCHOOL CIRCLE.

N.-W. PROVINCES.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION
FOR THE YEAR 1880-81.

By Major F. Bailey, R.E., Conservator of Forests.

CHAPTER I.
Summary of Administration during the year.

General.

1. *Staff of Officers.*—Messrs. E. McArthur Moir, E. Fernandez, A. F. Broun and F. B. Bryant, joined during the year, and the staff of gazetted officers stood thus on the 31st March :—

Mr. I. E. O'Callaghan	...	Dún Division.
Mr. E. McArthur Moir	...	Tons Division.
Mr. E. Fernandez	...	Working Plan Division.
Mr. A. Smythies	...	Jaunsár Division.
Dr. H. Warth	...	Saháranpur Division.
Mr. A. F. Broun	...	Attached to Working Plan Division.
Mr. F. B. Bryant	...	Attached to Tons Division.
Mr. J. C. Murray	...	Temporarily attached to the Oudh Circle.

Mr. Smythies held the Tons Division in addition to his own until the 15th July, when he made over charge of it to Mr. Murray, who held it until Mr. Moir's arrival on the 18th December.

2. *Rangers.*—No additional rangers have as yet been appointed. The permanent appointments have been kept open for passed students of the Forest School, and men will be selected as soon as they are available.

3. *Probationers.*—At the commencement of the year the undermentioned probationers were at the Forest School, *viz.*, Mr. Heinig, Mr. Copeland, Mr. Spread, Mr. Lowrie, Bábu Karuna Nidhan Mukerji. Mr. Heinig has been posted to Bengal and Messrs. Copeland and Spread to the Panjab. During the year Mr. J. Mendes and Bábu Shama Charn Chakarbatti, forest rangers, arrived from Bengal, and Bábu Chandar Kumár Chattarji, also a forest ranger, from the Central Provinces. The five probationers now at the Forest School have been either in charge of ranges or they have been attached to the Working Plan Division. Government has approved of the admission of candidates from native states with a view to their being trained for the forest service of their respective states, and the Foreign Minister of Patiála has applied for the admission of two men as probationers, but he has since withdrawn their names and sent in the name of another man.

4. *Apprentices.*—The undermentioned apprentices were at the Forest School at the commencement of the year, *viz.*, Fazl-ud-din from the Panjab and Jagmohan from Berár. The following apprentices joined during the year, *viz.*, Nának Chand, appointed by the Director of the Forest School; Naim ud-din Ahmad and Kripanáth from Assam. These men have all been either in charge of ranges or they have been attached to the Working Plan Division. The Political Agent, Alwar, applied for the admission of an apprentice, but it is believed that the man was not sufficiently educated to take advantage of the instruction to be given at the Forest School.

5. *Native non-commissioned officers.*—No native non-commissioned officers have as yet been appointed to this circle.

6. *Arrangements for instruction at head-quarters.*—The insufficiency of the staff of officers available during the recess months rendered it impossible to undertake the course of theoretical instruction which should have extended over the period from June to September; but the buildings were completed and handed over by the Public Works Department. Some apparatus consisting of a small air pump, an electrical machine, galvanic batteries, and other things, were received from England, and the laboratory formerly received from the salt mines was used by Dr. Warth to illustrate a short course of lectures on chemistry. The library received the following additions during the year, *viz.*:—

From the Government of India ...	... 130	volumes.
Presented by Mr. Brandis ...	... 186	„
Purchased at a cost of Rs. 142 ...	... 38	„
From other sources	... 3	„
Total	... 357	

31 pamphlets were also received from the Government of India. The books presented by Mr. Brandis consist of a most valuable collection of professional works from his private library. The collection of herbarium specimens was added to by donations principally made by Messrs. Moir, Smythies, Litchfield, and Copeland. A set of minerals received from the Superintendent of the Geological Survey was used by Dr. Warth at a lecture. Geological specimens were received from the iron mines at Dechauri in Kumaun and from Dehra Dún; Mr. Smythies also presented some specimens from Jaunsár, and Mr. Moir brought a collection from Ajmere. The geological and mineralogical specimens are all arranged in glass cases.

7. *Formation of Ranges, Forests, Blocks, and Beats.*—The arrangements made in Jaunsár as regards the formation of ranges were reported last year. The Dehra Dún Division has now been divided into four ranges comprising 16 forests and 55 blocks. When assigning these blocks to 28 beats, it is seen that the present establishment is insufficient for the effectual protection of the forests, and proposals for its increase must be made. Four compartments in Chandrabani and nine in Balindawála were formed. The Saháranpur forests have been divided into three ranges comprising 40 blocks, which have been formed into 24 beats. In order to clearly indicate the limits of the various blocks, posts have been erected at the points where the boundaries meet the Hardwár-Khára road, and metal tickets have been attached to them bearing the initial letters of the block names. Lakarkot, Ganjarban, and Rasulpur are divided into compartments, the numbers of which are indicated by metal tickets attached to trees at the corners. The Kálushahid bamboo forest is also divided into compartments, which, however, are not yet numbered. The Tons Division has been formed into four ranges, but the arrangements regarding the forests, blocks, and beats are not yet completed.

8. *Records of Reserves.*—The records of reserves are in progress for all divisions, and they will be made in three volumes for each division :—

1*st.*—An Atlas containing the maps and an area statement.
2*nd*—A detailed description of boundaries and marks.
3*rd.*—A record of rights.

9. *Forest legislation.*—Rules have now been issued under section 41 of the Indian Forest Act, which provides for the control of timber and other forest produce when in transit by land or water Special rules for the Dehra Dún and Saháranpur Divisions have been issued under sections 25 and 75 of the Act; and rules for the Tirí-Garhwál forests have been agreed to by the Raja and issued.

10. *Legal documents.*—The Conservator of Forests has prepared a summary of the orders of Government regarding the execution of contracts and other instruments connected with the administration of the forests, and has supplemented it by some special instructions to his divisional officers. The memorandum was approved by the Board of Revenue and printed, and it is now in use. Model deeds are issued from time to time showing the conditions that should be made in the case of each description of contract or agreement.

11. *Annual plans of operations.*—Annual plans of operations were issued for each division, and copies of them were submitted to Government. The plans were drawn up in consultation with the Divisional officers, and modified during the Conservator's inspection of the divisions. They are not intended to contain hard-and-fast orders for the conduct of the work, but they record what the Conservator and the Divisional officers agree should be done, and they are liable to modification from time to time as experience indicates.

12. *Supply of seeds.*—Supplies of seeds were sent from the Dehra Dún, Jaunsár, and Tons Divisions to supply indents from various officers not connected with this circle.

13. *Specimens of wood, bark, leaves, and soil for the French Forest School.*—In accordance with orders received from Government, collections of wood, bark, leaves, and soil were sent to the French Forest School from the Dehra Dún and Jaunsár Divisions. No acknowledgment of their receipt has yet arrived.

14. *Collection for the Berlin Fishery Exhibition.*—A bronze medal has been awarded to Dr. Warth for the collection sent by him last year to the Berlin Fishery Exhibition.

15. *Working plans.*—A detailed report on the operations of the Working Plan Division, which was employed entirely in the Central Circle, is appended to the present report. It will suffice to say here that the work of this division was utilized for the instruction of probationers and apprentices.

16. *Connection of the Ajmere Forests with the School Circle.*—Under orders of the Government of India, dated the 21st October, 1880, the Conservator of the School Circle was appointed professional adviser in forest matters of the Commissioner of Ajmere; and, with the consent of the Local Government, Messrs. Moir and Fernandez were directed to visit the forests of Ajmere and Merwára, chiefly with the object of enabling the Conservator to advise the Commissioner what should be done in order to secure the protection of the forests from fire. They commenced their inspection on the 3rd January and concluded it on the 7th February, when they embodied their suggestions in a report. The Conservator of Forests reached Ajmere on the 24th February, and consulted with the Commissioner regarding the suggestions made by Messrs. Moir and Fernandez; the result was recorded in a memorandum which, together with the report, has been submitted to the Commissioner.

17. *Hill States of the Panjab.*—In 1878 the Conservator of Forests was charged with the valuation of the deodar forests in the native states lying between the Giri and Tons rivers and between Bashahr and Sirmúr. The tract in question embraces the following states, *viz.*, Jubal, Tirhoch, Raiengarh (Kuntál), Gund, Balsan, and Punar. In September, 1879, he submitted his report on the Tirhoch forests, but as the Thákur is still a minor, and as the Government of the Panjab has decided that no binding lease can be executed until he comes of age, no arrangement with him has yet been concluded. The forests of Tirhoch were visited by Mr. Moir during the year. In September, 1879, a report on the Raiengarh (Kuntál) forests was also submitted; but the Rája having declined to agree to the terms proposed, a further report became necessary, and while the negociations were in progress he permitted some native timber merchants to fell most of the valuable trees: consequently it is not now likely that any lease will be executed. In 1879 the Conservator submitted

a report in which he showed that there are no important deodar forests in Gund, Balsan and Punar; and he also submitted a report on the forests in the neighbouring petty state of Dargoti. The valuation of the Jubal forests turned out to be a much more difficult matter than that of the forests of Tirhoch, and a qualified officer not having been available, it has not hitherto been possible to submit a final report; but Mr. Moir has now completed the work, and his report is awaited.

18. *Tour of the Conservator.*—All the forest divisions were inspected by the Conservator during the year. With the consent of Government he visited Calcutta and Ajmere, to confer with the Inspector-General of Forests and the Commissioner of Ajmere.

Area and Boundaries.

19. *Areas.*—The following additions in area have been made during the year:—

		Acres.
Saháranpur ...	Patri	13,896
Tons ...	Báshla	1,190
	Extension of Kotigádh	4,012
	Ditto of Bámsu	122
Jaunsár and Tons ...	Nominal additions owing to correct areas of the Jaunsár-Báwar forests being now given	3,619
	Total ...	22,839

The total area of the reserved and leased forests now stands at 491,084 acres.

20. *Boundaries.*—The boundary lines and marks are as a rule in good order; 40 miles of lines in Dehra Dún and 3½ miles in Saháranpur were cleared. The expenditure on this work and on repairs of marks, erection of notice-boards, and making the record of boundaries, amounted to Rs. 347.

Protection and Improvement.

21. *Establishment.*—The permanent establishment remained the same as in 1879-80. A temporary establishment costing Rs. 7,476 was sanctioned.

22. *Offences.*—There were 43 prosecutions involving 121 persons. Convictions were obtained in 39 cases involving 109 persons.

23. *Roads.*—The following sums were expended on new roads:—

	Rs.	Rs.
12¼ miles of fair-weather cart-roads in the Central range, Dehra Dún	889	
Balance due on 56 miles of roads in Dehra Dún reported last year	1,196	
Two miles of road in Saháranpur	5	
Fuel-carrying roads in Hajáwa and Mohna, Jaunsár Division	2,546	
Lambatách and Deota road, and inspection paths in Deota, Bámsu, and Kotigádh, Tons Division	362	
		4,998

The following sums were expended on repairs:—

	Rs.	
Repairs to fair-weather cart-roads in Dehra Dún	801	
Repairs of Tons road and of other roads in Jaunsár ...	684	
Repairs of Saiah-Tiuni road, Lambatách, and Deota road, and of sundry smaller roads and bridges, Tons Division ...	764	
		2,256
Total charged to AVII.(*a*) ...		7,254

Eighty-four miles of fair-weather cart-roads have now been opened in Dehra Dún at an average cost of Rs. 48 per mile. There are about 130 miles of forest roads open in Jaunsár.

24. *Buildings.*—The following sums were spent on buildings during the year, viz.:—

	Rs.
i.—Timber shed at head-quarters, reported last year ...	210
ii.—Carpenters' shed at head-quarters	14
iii.—Karwapáni, Balindawála, and Jhabrawála rest-houses completed	464
iv.—Elephant shed...	211
v.—Khára, Dholkhand, and Sahansra rest-houses in progress	346
vi.—Probationers' and foresters' huts at Deoban and Bodyár	537
vii.—Clerk's house and cook-house at Deota	350
Total new buildings	2,132
Repairs of rest-houses	230
Chaukis	279
Cleaning compounds	141
Chaukidars	246
Total charged to AVII. (*b*) ...	3,028

The figures given for the huts erected at Deoban and Bodyár are exclusive of Rs. 409 paid for sawing and carriage of timber and charged to AI.

25. *Fire conservancy and areas closed against grazing.*—The area of which the protection from fire was attempted was increased by 17,217 acres, and it amounted in 1880-81 to 113,639 acres, or 23 per cent. of the total area shown in Form 45. The area actually protected was 112,651 acres; and 988 acres (less than 1 per cent. of the area of which the protection was attempted) were burnt. The cost of the operations to the end of the season was Rs. 6,398. The cost per 1,000 acres of area actually protected was, for the Dún and Saháranpur Divisions, Rs. 116, and for the Jaunsár and Tons Divisions, Rs. 14; the average for the whole circle was Rs. 57, as compared with Rs. 56 during the previous year. The damage done by the fires was in all cases, except that of Mátkángra in Jaunsár, very slight.

Flocks and herds are excluded from all the fire-protected blocks of the Saháranpur and Tons Divisions and from 15,879 acres of the fire-protected areas in Jaunsár. In the Dún cattle are, as a temporary arrangement, permitted to graze in Dáluwála, Balindawála, and Chandrabani between the 1st July and 1st January, at which season there is no danger from fire.

26. *Experimental thinning of bamboos.*—In order to test the productive power of bamboos under various degrees of thinning, 16 clumps in Saháranpur were thinned in different ways. The experiment will be continued this year.

27. *Ringing of spruce and silver fir.*—The effect of the previous year's work in ringing spruce and silver fir in the Tons Division was carefully noted; the system adopted in Lambatách was to strip off a belt of bark from 1½ to 2 feet broad, while in Deota a ring six inches broad and two inches deep was cut into the wood. Under both kinds of treatment the trees, as a rule, died during the second year; but the first-mentioned system is the cheaper, and it will be adopted in future.

28. *Creeper-cutting.*—Creepers were cut in compartment No. I. of Ganjarban, Saháranpur Division.

29. *Sowing and planting.*—The area of plantations added was 108 acres, and the expenditure, excluding Rs. 525, spent from the Landour Cantonment funds, was Rs. 404. Seventy-five acres were received with the Patri forest: no seeds were sown in this plantation, but Rs. 217 were spent in watering and establishment. *Sál*—There was an entire failure of seed, and therefore no sowings of this species could be made. It is reported that nearly all the seedlings of the previous year have died, but experiments in the sowing of sál seed have now been begun on a regular system, and it is hoped that a better result will be obtained. *Khair and sissoo*—Twenty acres sown with khair seed in Ganjarban during the previous year were omitted from the returns of that year: they cost Rs. 31 and are looking well; five acres were sown with khair seed and a quarter acre with sissoo seed in Rasulpur: they cost together Rs. 17, and are doing fairly well. *Bamboos*—Three thousand bamboo stocks, of which all but 250 are now dead, were planted out in Ráni block at a cost of Rs. 31. A plot of 2½ acres has now been fenced for experiments in the propagation of bamboos. *Deodar*—There was a total failure of deodar seed; 1,078 plants remaining in the Bodyár nursery were put out in Thona and are doing well. The seed beds at Deothát were weeded, and the plants were protected by tatties. *Cypress and blue pine*—Seed were sown at Bodyár.

30. *Forest gardens.*—The Dehra Dún garden was surrounded with a hedge and the seeds of seven kinds of trees were sown, but the progress made was small. A very good site for a garden has been obtained at Chakráta; pillars and fencing have been erected round it where necessary and arrangements have been made to secure a supply of water throughout the year; nursery and seed beds have been prepared and various seeds have been sown; 120 Italian chestnut grafts were received from Saháranpur. The expenditure at Chakráta was Rs. 1,319.

31. *Chakráta Cantonment.*—Two blocks within cantonment limits at Chakráta were handed over for management by the Forest Department; boundary pillars were erected round the Lurli block and their position was defined on the map.

32. *Landour Cantonment.*—As good seed of coniferous trees was not available, upwards of 800 plants of various kinds were obtained by the Commandant from the Mussooree garden and planted out. About five miles of inspection paths were made and the fire line was widened. The cost of these operations, which was defrayed from the Cantonment fund, amounted to Rs. 525.

Yield and Working.

33. *Trees felled by departmental agency.*—Trees of the following girth classes were felled: —

Over 6′	6′ to 4½′	4′½ to 3′	3′ to 1½′	Under 1½′	Total.
837	600	402	242	33	2,114

The trees may also be classed thus: —

			No.	*C. ft.*
Selection fellings	...	...	803	48,590
Thinnings ...	...	...	340	11,459
Dry and fallen	...	...	932	56,233
Clearance on canal	...	...	39	1,208
	Total	...	2,114	117,490

The total number of trees reported as felled during the previous year was: —

No.	*C. ft.*
18,204	394,206

The difference is thus accounted for: the trees marked in Bulawála were not felled because negociations had been entered into with the Commissioner of Inland Customs for the supply of another kind of timber, which, however, was not taken by him. 12,066

trees shown as felled in Saháranpur during 1879-80 were not felled by departmental agency, and should not have appeared in the returns of that year. The number of trees felled in Jaunsár was unusually small in 1880-81 on account of the large stock of fuel on hand ; while in the Tons Division the fellings in 1879-80 were unusually large on account of Messrs. Winton and Braidwood's works at Raiengarh. In 1880-81 a few trees only had to be felled in the Tons Division to make up the number required for the yearly outturn of sleepers.

34. *Trees removed by purchasers.*—From the Saháranpur Division only has an account been received of the trees removed by purchasers.

		No.	C. ft.
Poles removed as thinnings under permits	...	5,198	9,840
Sold by auction (partly improvement cuttings)	...	1,837	1,658

3,174 house props were also sold. The rate for 1st class timber was raised from six annas to seven annas per cubic foot.

35. *Bamboos.*—There are 16 blocks in the Saháranpur Division from which bamboos are exported ; and to prevent over-cutting, and at the same time to avoid inconvenience to purchasers, arrangements have been made by which each block is only open every third year, every third block in succession being open during the same year. An attempt has been made to ascertain the solid contents of the different classes of bamboos.

36. *Scantlings, &c., cut, and depôt transactions.*—The following scantlings, &c., were cut :—

				No.	C. ft.
Sál ...	...	...	...	2,650	3,958
Tun ...	...	...	...	11	170
Haldu	...	...	...	1	6
Deodar	...	...	...	1,334	1,324
Do. (sleepers)	...	...	...	42,579	56,772
Chír ...	...	...	...	1,094	3,958
Fuel ...	...	...	...	...	115,998
Charcoal	...	...	...	...	927 1,000 (maunds).
		Total	...	47,669	183,133 1,000 (maunds).

The following scantlings, &c., were disposed of :—

			No.	C. ft.
Taken to depôt ...	Sál	... ...	2,650	3,958
	Tun	... ...	11	170
	Haldu	... ...	1	6
	Deodar	... ...	489	529
	Do. (sleepers)	...	42,059	56,204
	Fuel	... ...	...	70,137
	Charcoal	...	...	927 1,000 (maunds).
		Total ...	45,210	131,931 1,000 (maunds).
Sold in forest ...	Fuel	... ...	...	267
Used departmentally.	Deodar	... ...	846	808
	Chír	... ...	1,182	4,665
Loss by dryage ...	Fuel	... ...	...	100
		Total ...	47,238	137,771 1,000 (maunds).

The depôt transactions were as follows :—

Received.

	No.	C. ft.	
Timber and fuel	45,210	131,931 1,000 (maunds).	Taken to depôt (see above).
Sál ...	1	1	Bought.
Rai ...	2	4	Formerly condemned.
Deodar ...	15	59	Taken on stock at Delhi.
Do. (sleepers)	300	500	By conversion in depôt.
Fuel ...	...	984	Excess on remeasurement.
Do. ...	...	105	Taken on stock at rifle range.
Total ...	45,528	133,584 1,000 (maunds).	

Disposed of.

	No.	C. ft.	
Sál and other timber	15,601	13,242	Sold.
Deodar sleepers, B. G. ...	3,288	11,415	
Ditto M. G. ...	42,546	57,178	
Deodar scantlings	120	312	
Fuel		87,662	
Charcoal		927 918 (maunds.)	
Timber	1,324	2,100	Used departmentally and loss.
Fuel		3,255	
Total ...	62,879	176,091 918 (maunds).	

37. *Boxwood.*—A consignment of about 14 tons of boxwood was sent from the Jaunsár Division to Messrs. Churchill and Sim, but the report of sale has not yet been received.

38. *Sales to Public Departments.*—The following quantities of timber and fuel were supplied during the year :—

	No.	C. ft.	Profit. Rs.
Deodar sleepers ...	41,719	58,112	19,529
Other timber ...	5,553	5,727	3,054
Fuel ...	...	82,435	449
Total ...	47,272	146,274	23,032

To enable a just conclusion to be formed on this subject it is necessary to consider the transactions of a series of years. The subjoined table gives the result for the last two years :—

Year.	Timber.				Fuel.				Total profit.
	C. feet.	Revenue.	Cost.	Profit.	C. feet.	Revenue.	Cost.	Profit.	
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.
1879-80 ...	155,278	1,86,566	98,848	87,718	104,582	18,826	17,710	1,116	88,834
1880-81 ...	63,839	90,781	68,198	22,583	82,435	20,222	19,773	449	23,032
Total ...	219,117	2,77,347	1,67,046	1,10,301	187,017	39,048	37,483	1,565	1,11,866

39. *Fuel experiments.*—The experiments to determine the relation between solid and stacked cubic feet of fuel were not continued on account of a short supply of water being available; but the results obtained last year are now used to express all fuel in solid cubic feet. Experiments are in progress to determine the loss in weight which fuel undergoes when stacked in the open and when stacked under cover.

40. *Free supply of forest produce to villagers.*—In conformity with the agreement made with the inhabitants of Jaunsár, a quantity of trees and other produce has been given to them without payment. The amount asked for was again much less than the people are entitled to under the agreement. Forest produce was also given free to the inhabitants of the native states, but no regular agreement has yet been made with them.

41. *Charcoal-making.*—One hundred maunds of charcoal were made by contract from sál wood in Bulawála. The total cost of manufacture was Rs. 439; 918 maunds sold for Rs. 459.

42. *Sales of minor produce by auction.*—The system of selling farming leases for the collection of revenue on minor produce was continued. In Dehra Dún 11 leases were sold for Rs. 5,250. In Saháranpur 19 blocks were let in 10 lots for Rs. 7,478, and the Kálsi lease, Jaunsár, was sold for Rs. 590. There is a difficulty in estimating the amount of produce exported under these leases.

43. *Collection of grazing dues.*—The system of collecting grazing dues in the Dún and Saháranpur through revenue officials continues to answer, but some slight changes in the procedure may be necessary. The collection was more successfully accomplished in Dehra Dún than in Saháranpur.

44. *Yield in material.*—The following statement shows the total yield in material, and the amount realized :—

		Number or quantity.	*Amount realized.*
			Rs.
Timber of all kinds ...	c.ft.	153,571	1,34,134
Fire wood and charcoal...	maunds	46,870	28,966
Ditto ditto ..	c.ft.	90,228	
Bamboos ...	scores	98,346	10,203
Minor produce ...		...	9,174
Grazing and fodder grass		...	18,477
Confiscated drift and waif wood		...	1,177
Miscellaneous ...		...	511
		Total ...	2,02,642

The quantity of *timber* is less than that disposed of during the previous year by 87,722 cubic feet. In Saháranpur the exports were less by about 7,000 cubic feet, because the condition of the forests led to the issue of fewer passes; the exports of sleepers were less than those of the previous year by 13,930 broad gauge and 7,454 metre gauge sleepers; and the demand for timber at Chakráta was less than usual. *Firewood and charcoal*—A clerical error was made in last year's report, and the amount exported from the Dún should have been shown as 64,362 maunds; the difference between the sales of 1879-80 and those of 1880-81 (17,492 maunds) is probably due to the issue of farming leases, the quantities exported under which cannot as yet be ascertained; the reduced yield in the Jaunsár Division—23,269 cubic feet—was due to the small demand at Chakráta. The exports of *bamboos* were 14,274 scores less than during the previous year, caused chiefly by the closing of some of the best blocks in Saháranpur under the rotation system. The quantity of material exported under the head of *minor produce* cannot be given for the whole circle, but it was probably much the same as for the previous year.

45. *Valuation Surveys.*—Some ring counting was done by a probationer, and the results are given in appendix "A." The enumeration of the mature crop of deodar trees in the Kotigádh and Surárs forests was completed by Mr. Lowrie, and the results are given in appendix "B." The total number of mature deodar trees in Bámsu (completed last year), Surárs and Kotigádh is now estimated to be as follows :—

Bámsu	28,019
Surárs	10,481
Kotigádh	10,401

These numbers do not correctly represent the number of trees that can be utilized, as a very large number of them are standing on such precipitous ground that they cannot be felled.

FINANCIAL RESULTS.

46. *Receipts, Charges, and Surplus.*—In the following statement the receipts and expenditure have been so distributed as to show the results of the transactions under the three main heads from 1879-80 :—

Years.	Departmental timber operations.					Other revenue.			Formation, protection, and improvement charges.	Nett surplus.
	Quantity of timber, cubic feet.		Receipts.	Charges.	Surplus.	Receipts.	Charges.	Surplus.		
	Brought to depôt.	Sold.								
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	258,714 *298	292,770	2,16,324	1,17,578	98,746	71,117	26,416	44,701	94,818	48,629
1880-81 ...	133,584 *1,000	170,736 *918	1,22,123	1,02,887	19,236	80,519	26,485	54,034	70,729	2,541
Total ...	392,298 1,298	463,506 *918	3,38,447	2,20,465	1,17,982	1,51,636	52,901	98,735	1,65,547	51,170

* Maunds of charcoal.

47. *Value of Stock.*—The value of stock at the commencement of the year was Rs. 1,11,097, and at the close of the year the value was Rs. 91,814. The difference in value is thus accounted for—

	Rs.	Rs.
Decrease.		
Timber stock		24,147
Increase.		
Instruments, tools, and furniture ...	287	
Tents	1,098	
Buildings	2,959	
Laboratory	108	
Miscellaneous	412	
		4,864
Nett decrease ...		19,283

The stock on hand at the close of the year is thus classed—

	Rs.	Rs.
Deodar timber	17,639	
Sál timber	113	
Other timber	365	
Fuel and charcoal	5,048	
		23,165

	Rs.	Rs.
Instruments, machinery, tools, and furniture...	7,830	
Tents	2,074	
Buildings	50,592	
Miscellaneous	1,353	
		61,849
Elephants		6,800
Total ...		91,814

The deodar timber is priced at selling rates, as it does not deteriorate by keeping; the other timber and the fuel are priced at low rates to allow for deterioration. The other dead stock, especially the buildings, are probably valued at too high rates, and orders will be given to have them re-valued before next report.

48. *Outstandings.*—The outstandings at the commencement of the year were, after correction by the accounts office, Rs. 1,06,246, and at the close of the year they were Rs. 1,14,141. The outstandings now are—

Due from Public Departments.

	Rs.
Executive Engineer, Northern Division, Ganges Canal ...	9,467
„ „ Chakráta : due from other sources ...	533
Messrs. Winton and Braidwood	90,000
Contractor for carrying fuel	3,600
„ for supplying food	3,074
„ for sawing	1,000
Grazing dues	2,444
Advances of pay	932
Smaller contractors and disbursers	3,091
Total ...	[illegible]

The money due from public departments will be adjusted as soon as possible. Messrs. Winton and Braidwood's account will very shortly be cleared off.

49. *Financial results of the year's transactions.*—The principal transactions in the circle are the sale of sleepers to the State Railways and the supply of timber and fuel to the station at Chakráta. As these items are liable to considerable fluctuations, no fair judgment can be formed from the results of a single year, and the actual revenue and expenditure arranged under the three main heads for a series of years will prove the best guide when considering the financial results of forest administration in the circle. The actual figures for 1879-80 and 1880-81 are given in para. 46. These show for 1880-81 a *surplus* on departmental timber operations amounting to Rs. 19,236, and on other revenue amounting to Rs. 54,034, while the expenditure on formation, protection, and improvement has been Rs. 70,729. The nett surplus was Rs. 2,541. Taking the average of the two years, the surplus on departmental timber operations has been Rs. 58,991, the surplus on other revenue has been Rs. 49,367, the expenditure on formation, protection, and improvement has been Rs. 82,773, and the nett surplus has been Rs. 25,585.

The *revenue* for 1880-81 was less than that of the previous year by Rs. 84,800. There was a deficit of Rs. 96,170 under I. (*a*), caused by a reduction in the amount of sleepers cut and exported from the Tons Division, while the sales of timber removed by purchasers were increased by Rs. 10,926, principally realized in the Dún by the clearance of some land at Jogiwála, by the adjustment of a sum due by the Civil Surgeon, and by green sál timber sold in Dehra and dry sál timber sold under farming leases. The sales of firewood and charcoal were nearly the same as those of the previous year. The revenue on bamboos was less by Rs. 2,844, chiefly owing to some of the best

blocks in Saháranpur having been closed under the rotation system. The amount received as grazing dues exceeded that received during 1879-80 by Rs. 3,142, due to the new system of collection and to the realization of arrears. The receipts on minor produce were increased by Rs. 673. The receipts under heads III. and V. were increased by Rs. 361.

The *expenditure* for 1880-81 was less than that of 1879-80 by Rs. 38,712, which may be explained as follows :—

Reduced expenditure.

	Rs.	Rs.
Under AI. (*a*), mainly on account of reduced sleeper works in Tons Division	22,496	
Buildings (in 1879-80 the new head-quarter's buildings were bought)	24,544	
"Other works" of improvement	1,338	
Pay of subordinate establishment, chiefly probationers and apprentices	2,639	
Other items	1,334	
Total ...		52,351

Increased expenditure.

Under AI. (*b*), mainly on account of fuel works at Chakráta	5,422	
Stores, tools, and plant, mainly for head-quarters ...	1,348	
Pay and allowances of superior officers	2,862	
Other items	4,007	13,639
Total excess ...		38,712

The surplus for the year amounted to Rs. 3 per square mile, or about 1 pie per acre. The average surplus for the past two years has been Rs. 34 per square mile, or about 10 pies per acre.

50. *Actual cost of production of metre gauge sleepers.*—The actual cash expenditure under AI. (*a*), on the last batch of 42,000 metre gauge sleepers, was Rs. 59,620, or Re. 1-6-9 per sleeper. They are expected to realize an average of Re. 1-15-3 each, which will represent a nett cash profit of 8½ annas each. Experiments made to test the loss in dimensions from scourage during transit to Delhi tend to show that it will probably be sufficient to cut metre gauge sleepers 6′ 3″ × 8¼″ × 4¼″ instead of 6′ 3″ × 8¼″ × 4½.″

CHAPTER II.

Reserved Forests.

Dehra Dun Division.

AREA AND BOUNDARIES.

51. *Area.*—No changes in area during the year.

52. *Boundaries.*—The boundaries are in good order; about 40 miles of old boundary lines in the Central range were cleared at a cost of Rs. 300, of which only Rs. 150 had been paid at the close of the year. Rs. 22 were expended on repairs to boundary pillars.

PROTECTION AND IMPROVEMENT.

53. *Establishment.*—The permanent establishment was the same as that sanctioned for the previous year. Temporary establishment at a cost of Rs. 702 was sanctioned, but only Rs. 552 were expended on this account.

54. *Offences.*—There were six prosecutions involving 17 persons, of whom 13 were convicted.

55. *Roads.*—The following new fair-weather cart-roads were constructed :—

	Length in miles.
Mánaksidh	2
Chandrabani boundary road	5
Rawári	1
Tappawála	1
Jámanwála	1
Dhárawála	1
Balindawála	1
Kishenpur (extension)	¼
Total ...	12¼

The total cost of these roads was Rs. 889. In addition to this sum, Rs. 1,196 were paid for work done last year on the roads mentioned in para. 36 of the report for 1879-80, and Rs. 808 were expended on the repair of these roads. The total expenditure during the year was Rs. 2,893. About 84 miles of roads are now open, and the average cost of their construction has been Rs. 48 per mile.

56. *Buildings.*—The Karwapáni, Balindawála, and Jhabrawála rest-houses were completed, the expenditure on them having been Rs. 464 during the year. An elephant shed was erected at Karwapáni at a cost of Rs. 211. Repairs and renewals of chaukis cost Rs. 186, repair of rest-houses Rs. 22, clearing compounds Rs. 141, and temporary establishment, Rs. 246. The total expenditure was Rs. 1,270.

57. *Protection from fire and grazing.*—The area of which the protection from fire was attempted was the same as that of the previous year, *viz.*, 2,[illegible] acres.

239 acres were burnt in the following localities :—

	Acres.
Tháno	1
Dáluwála	56
Balindawála	176
Chandrabani	6
Total ...	239

The area burnt was therefore less than 1 per cent. of the area of which the protection was attempted. The damage done was very slight, the fires having chiefly burnt tracts of grass land in which there were no seedlings. The cost to the end of the hot season amounted to Rs. 3,202, or Rs. 117 per 1,000 acres actually protected, as compared with Rs. 104 last year. Grazing is permitted in Dáluwála, Balindawála, and Chandrabani between 1st July and 1st January, when there is no danger from fires. The advisability of continuing this arrangement will be considered. With this exception grazing is not permitted in the fire-protected blocks.

58. *Sowing and planting.*—Owing to the failure of sál seed, there were no sowings in the forest, but in the 3,839 seed patches and 990 plant holes, reported last year, only 206 seedlings and 104 transplants are said to be living.

59. *Forest garden.*—The garden has now been surrounded with a hedge of the cluster rose which is so common in the Dún.

The result of the sowings reported last year is that the following seedlings are living :—

Brabejum stellatifolium	7
Eucalyptus rostrata	16
„ *goniocalyx*	6
Ehretia lævis	15
Elcresossa vernicia	Numerous.
Bauhinia sp.	5
Excœcaria sebifera	6
Quercus annulata	15
Cupressus torulosa	14
Cedrus Deodara	6
Dalbergia Sissoo	18
Cedrela Toona	41
Acacia Catechu	4
Cassia Fistula	20
Albizzia odoratissima	Numerous.
„ *procera*	Ditto.
Melia Azedarach	Ditto.

The following did not germinate :—

Anogeissus pendula, Salipa, and some indigenous trees, of which the seed must have been bad.

Seedlings of the following kinds, sown during the year, are living :—

Acacia melanoxylon	10
„ *arabica*	16
„ *rupestris*	14
Schleichera trijuga	1
Calosanthes indica	20
Quercus incana	Numerous.
Bamboo	Ditto.

The following is an account of the plants received last year from the Sahâranpur Botanical Gardens :—

	Living 31st March, 1880.	Given away.	Dead.	Remaining.
Ceratonia Siliqua	27	...	9	18
Eucalyptus goniocalyx	20	6	6	8
„ *robusta*	1	...	1	...
„ *rostrata*	34	...	9	25
„ *siderophloia*	19	4	9	6
Olea sp.	12	4	...	8
Prosopis glandulosa	46	8	4	34
Sterculia rupestris	30	8	...	22
„ *tricosiphon*	19	6	1	12
Castanea vulgaris	49	17	...	32
Swietenia Mahogani	10	...	...	10

The garden cannot be said to have made much progress during the year.

YIELD AND WORKING.

60. *Trees felled.*—The following trees were felled as thinnings :—

	Number.	*Cubic feet.*
Sál	110	1,437
Tún	20	312
Haldu	6	36
Total ...	136	1,785

The figures for the previous year were—

Number.	*Cubic feet.*
3,057	38,009

The difference is accounted for by the fact that the trees marked in compartments 18 and 20 of Bulawála were not cut. This was because negociations had been entered into with the Commissioner of Inland Customs for the supply of another kind of timber, which was after all not taken by him.

61. *Scantlings cut and depôt transactions.*—The following scantlings were cut:—

	No. of pieces.	*Cubic feet.*
Sál	2,650	3,958
Tún	11	170
Haldu	1	6
Total ...	2,662	4,134

and 1,000 maunds of charcoal were manufactured. These were all carried to depôt.

The depôt transactions stand thus:—

	No. of pieces.	*Cubic feet.*
Received ...	2,662	4,134 and 1,000 maunds of charcoal.
Sold ...	13,708	10,517 and 918 maunds of charcoal.

62. *Charcoal-making.*—One thousand maunds of charcoal were made by contract from sál wood in Bulawála. The total cost of manufacture was Rs. 439 ; 918 maunds were sold for Rs. 459.

63. *Sale of farming leases.*—Eleven leases for the collection of revenue on dry sál wood, fuel, bamboos, and minor produce were sold for Rs. 5,250.

64. *Collection of grazing dues.*—The system of collecting grazing dues through the revenue officials has been found to answer ; and it is hoped that a still better result may be obtained when the system has been in vogue for a little time longer. It will by degrees be possible to ascertain with more certainty what number of cattle the people really possess.

65. *Yield in material.*—The following statement shows the total yield in material and the amount realized :—

	Number or quantity.	*Amount realized.*
		Rs.
Timber of all kinds ...	58,711	31,535
Firewood and charcoal (maunds)	46,870	3,756
Bamboos (scores)	57,300	6,743
Grazing and foodder grass ...	...	8,154
Minor produce (maunds) ...	48,890	3,963
Confiscated, drift, and waif wood	...	650
Miscellaneous	...	147
Total ...		54,948

The quantities given do not include produce exported under farming leases, the amount of which cannot at present be estimated. The quantity of timber is nearly the same as that for the previous year (58,271 cubic feet). By a clerical error in last

year's report the amount of firewood and charcoal was shown as 6,810 maunds. It should have been 64,362 maunds. The figures for 1880-81 were 46,870; decrease 17,492 maunds. Decrease in bamboos 12,884 scores. These apparent decreases are probably due to the sale of farming leases, the amount removed under which cannot be given. There was an increase of 2,120 maunds of minor produce.

FINANCIAL RESULTS.

66. *Receipts, charges, and surplus.*—In the following statement the receipts and expenditure have been so distributed as to show the results of the transactions under the three main heads from 1879-80:—

Years	Departmental timber operations.					Other revenue.			Formation, protection, and improvement of forests, V., VII., VIII. ¼VI. ¼B.	Net surplus.
	Quantity of timber, cubic feet.									
	Brought to depôt.	Sold.	Receipts I.	Charges I ¼VI $\frac{1}{16}$B.	Surplus.	Receipts II., III., IV.	Charges II., III., IX. ¼VI. $\frac{7}{16}$B.	Surplus.		
			Rs	Rs.	Rs.	Rs	Rs	Rs.	Rs	Rs.
1879 80 ...	9,889 298*	16,948	4,289	1,844	2,445	37,193	9,677	27,516	17,036	12,925
1880-81 ...	4,134 *1,000	10,517 *918	5,186	2,320	2,866	49,762	9,027	40,735	19,901	23,700
Total ...	14,023 *1,298	27,465 *918	9,475	4,164	5,311	86,955	18,704	68,251	36,937	36,625

* Maunds of charcoal.

67. *Value of stock.*—The value of stock was increased by Rs. 529. The decrease in value of timber and charcoal is Rs. 458, while the value of buildings is increased by Rs. 814, and that of tools, furniture and tents by Rs. 173.

68. *Outstandings.*—At the commencement of the year the balance of outstandings amounted to Rs 2,904, while at the close of the year it amounted to Rs. 9,587, which sum is almost entirely due from the Northern Division, Ganges Canal.

69. *Financial results of the year's transactions.*—The nett cash *surplus* was Rs. 23,700, as compared with Rs. 12,925 during 1879-80. The table given in para. 66 shows that the average surplus for the two past years was Rs. 18,322.

The *revenue* exceeded that of 1879-80 by Rs. 13,466. The timber sales were increased by Rs. 10,400, of which Rs. 5,300 were realized by the sale of timber from land at Jogiwála, which was some years ago excluded from forest limits, but to the timber on which the department had a right; Rs. 2,415 were realized from the Civil Surgeon on account of an outstanding for timber supplied; Rs. 1,767 were on account of sál timber sold in the station of Dehra, and Rs. 918 were due to the sale of dry sál wood under farming leases. There was an increase of Rs. 311 on bamboos, and an increase on minor produce amounting to Rs. 1,522. The grazing dues were increased by Rs. 1,933, due, it is believed, to the new system of collection. Against these increases of revenue there was a deficit of Rs. 401 on firewood and charcoal and of Rs. 298 on other items.

The *expenditure* exceeded that of 1879-80 by Rs. 2,691, of which Rs. 1,579 were spent on roads, Rs. 908 on buildings, and Rs. 204 represent the excess balance on other items.

The surplus amounted to Rs. 85 per square mile or 2·08 annas per acre. The figures for the previous year were Rs. 47 per square mile or 1·07 annas per acre.

Saharanpur Division.

AREA AND BOUNDARIES.

70. *Area.*—The area has been increased by 13,896 acres on account of the addition of the Patri forest, and the total area is now 190,696 acres. The rights of a cultivator in a piece of forest land near Mohan were bought out at a cost of Rs. 125.

71. *Boundaries.*—The boundary lines and marks in the Eastern and Western ranges are in good order, those in the Central range will be examined next year.

The following expenditure was incurred :—

	Rs.
Clearing 3½ miles of boundary lines in the Western range ...	9
Boundary pillars	16
Record of boundaries	31
Notice-boards and metal tickets	31
Total ...	87

PROTECTION AND IMPROVEMENT.

72. *Establishment.*—The permanent establishment, which remains the same as that of 1879-80, was supplemented by a temporary establishment costing Rs. 4,170—an increase over the figures of last year owing to the acquisition of the Patri forest.

73. *Offences.*—There were three cases involving 10 persons. Convictions were obtained in two cases involving 6 persons.

74. *Roads.*—Two miles of road were made from the Khára rest-house towards Daula at a cost of Rs. 5.

75. *Buildings.*—The following expenditure was incurred under AVII. (*b*) :—

	Rs.
Khára rest-house	300
Dholkhand rest-house	13
Sahansra rest-house	33
Mohan chauki	93
Petty repairs	2
Total ...	441

76. *Fire conservancy and area protected against grazing.*—The area of which the protection from fire was attempted was increased by the addition of 9,259 acres, and it amounted in 1880-81 to 20,259 acres. Of this area 280 acres were burnt, *viz.*, 35 acres in Andheri and Bám and 245 acres in the Kálushahid bamboo forest (Rauli and Ráni). The damage is reported to be slight in both instances. The area burnt amounted to about 1¼ per cent. of the area of which the protection was attempted, and the cost to the end of the hot season amounted to Rs. 2,296, or Rs. 115 per 1,000 acres actually protected. The whole area is closed against grazing.

77. *Experimental thinning of bamboos.*—In order to test the productive power of bamboo clumps under various degrees of thinning, sixteen clumps were thinned in different ways. The experiment will be continued this year.

78. *Creeper-cutting.*—Creepers were cut in compartment No. 1 of Ganjarban block.

79. *Sowing and planting. Patri.*—The Ferozpur plantation of 75 acres was received from the Canal Foundry with the Patri forest. No seeds were sown in it, but the following sums were spent, *viz.*, Rs. 121 for water and Rs. 96 in clearing the lines and in wages of establishment. The young trees are, as a rule, doing well.

Sál sowings—There was no sál seed available, the seed having everywhere failed. It is reported that the seedlings, the result of Major Jarrett's sowings, have all died. *Khair and sissoo sowings*—The old sowings in compartment No. 3 of Ganjarban (20 acres) are looking well; five acres in compartment No. 3 of Rasulpur were sown with khair seed, and a quarter of an acre in compartment No. 6 of the same block was sown with sissoo. They are both doing fairly well. They cost Rs. 17. *Shâhmansur*—The plantation (two acres has almost entirely failed. *Bamboos*—Three thousand bamboo stocks, of which all but 250 are now dead, were planted out in Rání block. The cost was Rs. 31. A plot of 2½ acres for further experiments in the propagation of bamboos has been fenced in.

The total expenditure during the year on planting and sowing was Rs. 265.

YIELD AND WORKING.

80. *Trees felled by departmental agency.*—There were no departmental timber operations. Last year's report shows 12,066 trees measuring 20,697 cubic feet as felled, but these were not felled by departmental agency, and should not, properly speaking, have been shown in form No. 53 for that year.

81. *Trees removed by purchasers*—The following poles were removed as thinnings under permits:—

		Number.	*Cubic feet.*
Sál	... ...	3,470	6,382
Other kinds	... ...	1,728	3,458
	Total ...	5,198	9,840

and the following were sold by auction:—

Sál	... ...	1,230	1,125
Other kinds	... ...	607	533
	Total ...	1,837	1,658

In addition to the above, 3,174 house props were removed by purchasers.

Of the trees sold by auction, 700 were selected as improvement cuttings in compartments 3 and 4 of Lakarkot; they were chiefly badly-grown or injured trees. The stools of these trees were cut carefully so as to favor coppicing, and the result will be reported. The rate for first class timber was raised from six annas to seven annas per cubic foot.

82. *Bamboos.*—There are 16 blocks from which bamboos are exported; and to prevent overcutting, and at the same time to avoid inconvenience to purchasers, arrangements have been made by which each block is only open every third year, every third block in succession being open during the same year.

An attempt has been made to ascertain the solid contents of the different classes of bamboos.

83. *Sales of minor produce by auction.*—The system of selling farming leases was continued in the Eastern and Central ranges, 19 blocks having been given out on lease in 10 lots, which realized Rs. 7,478 at auction The system continues to be a success. There is of course a difficulty in estimating the amount of produce exported under these leases. Leases were not sold in the Western range.

84. *Collection of grazing dues.*—The grazing dues were collected by the revenue officials under the new system, which it is hoped will answer, but the collection was not so successfully accomplished as in Dehra Dún.

85. *Yield in material.*—The following statement shows the yield in material and the amount realized :—

		Number or quantity.	*Amount realized.*
			Rs.
Timber of all kinds, cubic feet	...	13,635	5,552
Firewood (weight unknown)	...	...	3,882
Bamboos (scores) ...	...	40,138	3,404
Minor produce (weight unknown)	...	...	4,964
Grazing dues	...	...	9,274
Miscellaneous ...	...	...	4
		Total Revenue ...	27,080

The quantity of timber exported in 1879-80 amounted to 20,697 cubic feet. The condition of the forests led to the issue in 1880-81 of fewer passes for the export of green timber. The number of bamboos exported is 29,995 scores less than during the previous year ; this was caused by the closing of some of the best blocks under the rotation system.

FINANCIAL RESULTS.

86. *Receipts, charges, and surplus.*—In the following statement the actual receipts and expenditure have been so distributed as to show the results of the transactions under the three main heads for the past two years :—

Years.	Departmental timber operations.					Other Revenue.			Formation, protection, and improvement of Forests, VII., VIII., ½VI., ½B.	Nett surplus.
	Quantity of timber, cubic feet.		Receipts, I.	Charges, I.	Surplus.	Receipts, II., III., IV., and V.	Charges, II., III., IX., ½VI., ½B.	Surplus.		
	Brought to depôt.	Sold.								
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	...	...	...	5	def. 5	31,504	11,343	20,161	9,753	10,403
1880-81 ...	...	...	...	...	...	27,080	10,237	16,843	7,869	8,974
Total ...	...	...	...	5	def. 5	58,584	21,580	37,004	17,622	19,377

87. *Stock.*—The value of stock at the commencement of the year was Rs. 3,941, and at the close of the year the value was Rs. 5,385.

The increase of Rs. 1,444 is made up of—

	Rs.
Buildings	645
Instruments, tools, tents, and furniture... ...	307
Miscellaneous	492

88. *Outstandings.*—At the commencement of the year the outstandings in favor of the department were shown as Rs. 58, but the Accounts Department has added Rs. 1,906 on account of grazing dues, and the opening balance now appears as Rs. 1,964. At the close of the year the outstandings were Rs. 2,494, mostly on account of grazing dues.

89. *Financial results of the year's transactions.*—The cash *surplus* was Rs. 8,974, as compared with Rs. 10,403 in 1879-80. The table given in para. 86 shows that the average surplus for the past two years has been Rs. 9,688.

The *revenue* was less than that of 1879-80 by Rs. 4,424. The revenue on timber was less than that of the previous year by Rs. 154, while there is a deficit in the following items :—

	Rs.
Firewood	1,317
Bamboos	3,188
Minor produce	896
Total ...	5,401

This is partly accounted for by the fact that Rs. 2,913 of the money due for farming leases was still due at the end of the year, and all the leases included bamboos and firewood; arrangements will be made to get the money in before the close of each financial year. The remaining Rs. 2,488 of the deficit was caused by some of the best bamboo-producing blocks having been closed under the new arrangement regarding rotation cuttings. There was an increase of revenue on grazing, amounting to Rs. 1,180 ; this is due to arrears for past years having been collected. Rs. 2,444 remained due at the end of the year, and this sum is now being collected. There was a deficit of Rs. 49 on other items.

The *expenditure* was less than that of 1879-80 by Rs. 2,995 mainly on account of a reduction in the charges for pay and allowances of superior officers.

The surplus amounted to Rs. 30 per square mile, or about 0·75 anna per acre, as compared with Rs. 26 per square mile, or 0·6 anna per acre, last year.

Jaunsar Division.

AREA AND BOUNDARIES.

90. *Areas.*—There is a nominal increase of 3,749 acres, due to the correct areas of the Jaunsár-Báwar forests having now been given by the Forest Survey Department.

91. *Boundaries.*—The boundaries of forests in British territory are, as a rule, in good order. A sum of Rs. 67 has been expended in repairing pillars, in erecting new pillars round Soi Toli (Cantonment) block, in demarcating compartments in Hajáwa, and in cutting boundary lines round Kurwa block and round Tilwári encamping-ground. The leased forests have not yet been demarcated.

PROTECTION AND IMPROVEMENT.

92. *Establishment.*—The permanent establishment was the same as during the previous year. It was supplemented by a temporary one costing Rs. 1,380.

93. *Offences.*—Out of 23 cases involving 76 persons convictions were obtained in 20 cases involving 73 persons. Two of the remaining three cases, which occurred in the leased forests of Tiri Garhwál, are still pending.

94. *Roads.*—The following roads were made and repaired at the cost stated against each.—

	Rs.
Hajáwa fuel-carrying roads	2,025
Tons-Chakráta road repaired	451
Mohna block roads	521
Ordinary repairs	233
Charged to A.VII. (*a.*)	3,230
Hajáwa inspection path made	38
Bodyár ditto ditto	55
Charged to A.VIII. (*f.*)	93
Total ...	3,323

The number of miles of roads and paths in the Jaunsár Division amounts roughly to 130, and if they are to be kept up in good condition, it will be necessary to allot a larger sum annually for their repair. The Tons-Chakráta road is much damaged by the heavy traffic of buffaloes and banias' animals, and a proposal made during the year to establish a toll on it is under consideration.

95. *Buildings.*—The following sums were spent under A.VII.(*b.*) on buildings :—

	Rs.
Foresters' hut at Bodyár	194
Probationers' hut at Bodyár	174
Ditto at Deoban	169
Ordinary repairs to existing bungalows and huts	134
Total ...	671

The above figures are exclusive of the sawing and carriage of timber, which cost Rs. 409, and which was erroneously charged to A.I.(*a*). The Inspector-General of Forests has suggested that a better style of hut is required for probationers. An endeavour has been made to induce the Commissariat Department to pay a lump sum down for the new fuel shed, instead of spreading the payment over a series of years, but nothing was settled at the close of the year.

96. *Protection against fire and grazing.*—The area attempted to be protected from fire was increased by 4,748 acres, and it amounted this year to 38,714 acres, of which only 16 acres ($\frac{1}{24}$th per cent.) were burnt. The cost to 30th June was Rs. 458, or Rs. 12 for 1,000 acres successfully protected, the average cost per 1,000 acres during the previous year having been Rs. 24. The areas burnt were— :

Forest.	*Block.*	*Acres.*
Deoban ...	Mátkángra	12
Ditto ...	Durnái	1
Cantonment ...	Lurli	3
	Total ...	16

The damage done in Mátkángra was considerable, but it was slight in the other blocks. Of the areas protected from fire, 15,879 acres are closed against flocks and herds, and in the remainder of the protected area grazing is permitted. The details of the area closed against grazing will be found in form 47, the figures given in which are as yet approximate only, but they will be given accurately in next report. The areas protected are all accurately shown on the maps.

97. *Planting and sowing.*—There is very little to record under the head of planting and sowing, as there was a total failure of deodar seed in 1880, and the only coniferous seeds that could be collected in any quantity were cypress and blue pine.

Bodyár. These seeds were sown at Bodyár, both in the nursery and in patches in the forest. In the rains of 1880, the old deodar and other plants remaining in the Bodyár nursery, 1,078 in number, were put out in Thona on a slope with a westerly aspect; when visited in April, 1881, they were doing very well. There are about 4,000 deodar plants two years old now available in the nurseries, one-half of which have been raised on hard bottoms and the other half on deep soil; they will be put out side by side during the rains of 1881 in order to test the efficacy or otherwise of the short bushy fibrous roots produced on the hard bottoms.

The operations at Bodyár cost Rs. 31.

Deothat. At Deothat the young plants were weeded and protected against the frost by *tatties* and new beds were prepared. These operations cost Rs. 77. There are about 8,000 deodar plants of the same age as those at Bodyár, with a few spruce and blue pine; the former will be put out during the rains of 1881.

98. The site chosen for the forest garden at Chakráta was made over by the military authorities, and the position of the Forest Department with regard to the land and the trees growing on it was clearly defined; pillars have been erected wherever this seemed necessary, and a portion of the boundary has been fenced. A canal was made leading from an adjacent stream into the garden, and two masonry tanks, to serve as reservoirs, were built in suitable places. Nursery and seed beds were prepared, and various seeds, indigenous and exotic, were sown; about 120 Italian chestnut grafts were received from Saháranpur and put out after the close of the financial year.

Chakráta forest garden.

The cost of these operations was as follows :—

		Rs.
Making roadway for canal and laying down wooden canal	...	399
Materials for, and construction of, two masonry tanks	...	362
Fencing part of garden	...	166
General expenses, including establishment (Rs. 75)	...	392
Total	...	1,319

99. The two blocks within cantonment limits (Soi, Toli and Lurli) were handed over for management by the Forest Department; boundary pillars were erected round the former block, and their position was surveyed on to the cantonment map.

Contonment forest blocks.

100. The Landour plantation was visited during the year. Good seeds of coniferous trees not being available, the Commandant procured various plants (see margin) from the Mussooree garden and put them out in the upper part of the plantation; when last seen they were doing well. About five miles of inspection paths were made and the fire line was widened. The expenditure (Rs. 525) was, as usual, defrayed by the Commandant.

Landour Cantonment.

Æsculus indica	... 210
Populus Italiana	... 196
Thuja Fortunis	... 350
„ orientalis	... 50
Total	... 806

YIELD AND WORKING.

101. *Trees felled.*—The following trees were felled during the year :—

					No.	*Cubic feet.*
Deodar	...	...	...	...	57	1,543
Oak	...	...	...	...	515	16,995
Fir	...	...	...	...	1,200	83,790
			Total	...	1,772	102,328

The fellings may be thus classed—

Selection fellings	...	...	...	628	38,313
Thinnings ...	...	...	...	204	9,674
Dry and fallen trees	...	...	...	901	53,133
Clearance on canal	...	...	...	39	1,208
		Total	...	1,772	102,328

The numbers felled during 1879-80 were :—

No.	*Cubic feet.*
398	41,600

The number in that year was unusually small on account of the large stock of fuel in hand.

102. *Scantlings, &c., cut and depôt transactions.*—The following scantlings and fuel were cut :—

	Number.	Cubic feet.
Deodar	1,334	1,324
Fuel	...	115,998
Charcoal	...	947
Total ...	1,334	118,269

The following scantlings and fuel were disposed of—

		Pieces.	Cubic feet.	
Deodar	...	488	516	Taken to depôt.
Fuel	...	...	70,137	
Charcoal	...	...	927	
		488	71,580	
Fuel	...	...	267	Sold in forest.
Fuel	...	...	100	Dryage.
Deodar	...	846	808	Used departmentally.
Total	...	1,334	72,755	

The depôt transactions stand thus :—

Received—

	Number.	Cubic feet.
Taken to depôt (see above)	488	71,580
Rai, formerly condemned	2	4
Fuel, excess due to remeasurement ...	...	984
Do. taken on stock at rifle range ...	...	105
Sál, purchased	1	1
Total ...	491	72,674

Disposed of—

		Number.	Cubic feet.	
Timber	...	1,877	2,653	Sold.
Fuel	...	...	87,662	
Charcoal	...	...	927	
Fuel	...	...	3,255	Loss on remeasurement.
Timber	...	1,024	955	Used departmentally.
Total	...	2,901	95,452	

103. *Boxwood.*—A second experimental consignment of about 14 tons of boxwood was sent to Messrs. Churchill and Sim for sale. The result will be reported.

104. *Sales to Public Departments.*—The supply of 5,727 cubic feet of timber and 82,435 cubic feet of fuel resulted in an estimated profit of Rs. 3,503. As no just conclusion can be derived from the result of a single year's transactions, the figures will in future be shown for a series of several years. At present it will suffice to give the figures for the two last years. They are as follows—

Year.	Timber.				Fuel.				Total surplus.
	Cubic feet.	Revenue.	Cost.	Surplus.	Cubic feet.	Revenue.	Cost.	Surplus.	
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.
1879-80 ...	2,285	3,245	2,964	281	104,582	18,826	17,710	1,116	1,397
1880-81 ...	5,727	5,361	2,307	3,054	82,435	20,222	19,773	449	3,503
Total ...	8,012	8,606	5,271	3,335	187,017	39,048	37,483	1,565	4,900

The present arrangement under which the fuel, after being handed over to the Commissariat Department, remains at the risk of the Forest Department, is found exceedingly inconvenient, and negociations are in progress with a view to the fuel being finally taken over on delivery.

105. *Fuel experiments.*—The experiments to determine the relation between solid and stacked cubic feet of fuel were not continued on account of a short supply of water being available; but the results obtained last year are now used to express all fuel in solid cubic feet. Experiments are in progress to determine the loss in weight which fuel undergoes when stacked under cover.

106. *Free grants to villagers.*—The following trees and other forest produce were supplied, free of charge, to the villagers of Jaunsár-Báwar during the year :—

	No.
Green deodar trees	97
Karis and planks of dry deodar	4,152
Blue pine trees	119
Spruce fir ,, ...	74
Chír ,, ...	208
Cypress ,, ...	4
Moru oak ,, ...	71
Bán oak ,, ...	230
Sál ,, ...	23
Sain ,, ...	4
Bákli ,, ...	25
Sándhan ,, ...	40
Singor ,, ...	39
Khair ,, ...	10
Bakarla ,, ...	20
Loads of torch-wood	1,481
Ringáls...	200

The timber removed, except in the case of the cypress trees, is again in every ~~instance~~ less than the amount the people are entitled to, but the deodar is much in excess of that removed last year. In the leased forests of Tiri-Garhwál the following timber was supplied gratis :—

	No.
Shálna and Banál.—Green deodar trees for villagers ...	102
,, ,, ,, ,, temples ...	9
,, ,, Dry karis and planks	2,466
Jaunpur.—Green deodar trees for villagers	13
,, ,, ,, ,, temples ...	3

A definite arrangement with the villagers, similar to that obtaining in Jaunsár-Báwar, has yet to be made.

107. *Kálsi lease.*—The right to farm the revenue or minor produce in the Kálsi forest was sold for Rs. 590.

108. *Yield in material.*—The following statement shows the total yield in material during the year and the revenue realized.

	No. or quantity.	*Amount realized.*
		Rs.
Timber of all kinds, c.ft. ...	...12,248	7,482
Firewood and charcoal, c.ft. ...	...90,228	21,328
Bamboos	908 scores	56
Minor produce (grass, limestone, &c.), weight unknown.		247
Grazing dues		774
Confiscated drift and waifwood		374
Miscellaneous		309
Total Revenue ..		30,570

As the figures given last year included those for the Tons Division to the date of its formation, no comparison of the yield for the two years can usefully be made in the case of timber; the reduced yield of fuel is due to the small demand at Chakráta.

109. *Rate of growth.*—Some ring counting was done in Hajáwa by Bábu Shama Charn Chakarbatti, and the results are given in appendix A.

FINANCIAL RESULTS.

110. *Receipts, charges and surplus.*—In the following statement the receipts and expenditure have been so distributed as to show the results of the transactions under the three main heads for the past two years. From the figures given for 1879-80 in last report, those relating to the Tons Division, before the date of its separation from Jaunsár, have been excluded :—

Years.	*Departmental timber operations.*					*Other revenue.*			Formation, protection, and improvement of forests V., VII., VIII., $\frac{3}{16}$ VI., $\frac{1}{2}$ B.	Nett surplus.
	Quantity of timber and fuel, cubic feet.		Receipts I.	Charges I, $\frac{8}{9}$ VI., $\frac{7}{16}$ B.	Surplus.	Receipts II., III., and V.	Charges II, IX. $\frac{1}{16}$ VI. $\frac{3}{16}$ B.	Surplus.		
	Brought to depôt.	Sold.								
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80	92,246	120,983	28,286	20,292	7,994	2,085	631	1,454	9,677	deficit 229
1880-81	72,674	91,242	27,375	24,841	2,534	3,194	1,727	1,467	11,469	deficit 7,468
Total...	164,920	212,225	55,661	45,133	10,528	5,279	2,358	2,921	21,146	deficit 7,697

111. *Stock.*—Value of stock at the commencement of the year was Rs. 53,488, while at the close of the year it was Rs. 46,350. The difference is thus accounted for:—

	Rs.	Rs.
Decrease.		
Timber stock	8,597	
Miscellaneous articles	81	
		8,678
Increase.		
Tools, instruments, and furniture ...	589	
Tents	51	
Buildings	900	
		1,540
Nett decrease ...		7,138

The value of stock at present in hand may be roughly classed as follows:—

	Rs.
Buildings	22,000
Deodar timber	16,000
Fuel	5,000
Tools, &c.	3,000
Total ...	46,000

The deodar timber, which does not deteriorate, is valued at selling rates. The fuel is valued somewhat under the selling rate, so as to allow for deterioration. The buildings and tools are probably valued at too high rates, and a reduction will be made in the accounts of the current year. This will be considered in the next returns.

112. *Outstandings.*—The outstandings of revenue are Rs. 533, as compared with Rs. 145 at the commencement of the year. The increase is principally due to an advance made to the contractor who carries fuel to the Chakráta depôt.

113. *Financial result of the year's transactions.*—For the purpose of comparing the results with those of 1879-80, the figures for the Jaunsár and Tons Divisions, which were made separate divisions during the latter year, are taken together. The nett cash *surplus* was Rs. 5,571, as compared with Rs. 94,681 in 1879-80.

The *revenue* was less than that of 1879-80 by Rs. 93,855. The deficit of Rs. 96,608 under I. (*a*) is due to a reduction in the amount of sleepers cut and exported from the Tons Division. There was a deficit of Rs. 534 under head V., and increases amounting to Rs. 3,287, mainly on fuel sold fron depôt and timber removed by purchasers in Jaunsár.

The *expenditure* was less than that of the previous year by Rs. 24,745, which may be thus explained:—

	Rs.	Rs.
Reduced timber works in the Tons Division	22,291	
Reduced expenditure on roads (in 1879-80 the Saiah-Tiuni road was made)	1,044	
Reduced expenditure on "other works" of improvement ...	1,644	
Reduced expenditure on pay and allowances of superior officers (there was only one officer for both divisions during most of the year)	5,274	
Reduction on other items	1,071	
		31,344
Increase on fuel works in Jaunsár	5,391	
Increase on other items	1,208	
		6,599
Total ...		24,745

From the table given in para. 110 it will be seen that the nett cash deficit of the Jaunsár Division in 1880-81 was Rs. 7,468, and that, exclusive of the figures of the Tons Division for 1879-80, the average nett deficit for the past two years has been Rs. 3,848.

Tons Division.

AREA AND BOUNDARIES.

114. *Area.*—The following additions have been made to the area during the year:—

	Acres.
Báshla Chír forest	1,190
Extension of Kotigádh	4,012
Ditto of Bámsu	122

The correction of the figures for the Khunigádh forest causes a nominal addition of 430 acres, while the correction of those for Surárs and Deogár causes a nominal reduction in area of 560 acres.

115. *Boundaries.*—The boundaries of the forests in British territory are in good order. In conformity with orders issued on the receipt of the rules for the Tiri-Garhwál forests, the final demarcation of the whole of the leased forests in the Deota and Lambatách ranges (*i.e.*, Deota, Bámsu, Surárs, Báshla, Dútmir, Lambatách, Kotigádh) is under consideration, and will, it is hoped, be accomplished shortly. The demarcation of the reserved portions of the Raiengarh and Dádi forests is also under consideration. The expenditure during the year was Rs. 21.

PROTECTION AND IMPROVEMENT.

116. *Establishment.*—The establishment, both permanent and temporary, was the same as for the previous year.

117. There were 11 prosecutions involving 18 persons, of whom 17 were convicted; 10 of the cases were disposed of by the Divisional officer under section 67 of the Forest Act.

118. *Roads and bridges.*—New roads were constructed at the cost stated against each.

Name.	*Length in miles and chains.*	*Cost.* Rs.
Part of Lambatách and Deota road ...	3 2	265
Inspection paths in Deota	1 10	39
Ditto in Bámsu	1 18	36
Ditto in Khunigádh	0 50	22
Totals	5 75	362

The following roads were repaired :—

Saiah and Tiuni road	358
Lambatách and Deota road	247
Sundry paths	146
Total	751

A small bridge over the Chátrágadh cost Rs. 13.

119. *Buildings.*—The following sums have been expended on buildings at Divisional head-quarters :—

	Rs.
House for English clerk	196
Cook-house (not completed)	154
Repairs to buildings	72
Total charged to AVII. (*b.*) ...	422

120. *Protection from fire and grazing.*—The area of which the protection from fire was attempted, was increased by 3,210 acres, and amounted to 27,002 acres in 1880-81. Of this area the following portions were burnt, *viz.* :—

	Acres.
Thadiár block	250
Khunigádh block	200
Kandar block (Lambatách)	3
Total ...	453

The two first-mentioned fires were in the Chír forest, and are said to have been due to the carelessness of the forest guard when burning the fire lines. The area burnt is 1·67 per cent. of the area of which the protection was attempted. The cost to the end of the hot season was Rs. 442, or Rs. 17 per 1,000 acres of the area actually protected.

121. *Ringing of spruce and silver fir.*—The effect of the previous year's operations in the ringing of spruce and silver fir was carefully noted. The system adopted in Lambatách was to strip off a belt of bark from 1½ to 2 feet broad ; while in Deota a ring six inches broad and two inches deep was cut into the wood. In both cases the trees, as a rule, died during the second year, but the first-mentioned system is the cheaper, and it will be adopted in future.

YIELD AND WORKING.

122. *Trees felled by Government agency.*—The following fellings were made during the year in the Deota forest :—

	Number.	*Cubic feet.*	
Deodar (green)	25	4,277	Selection fellings.
Chír (green)	150	6,000	
Deodar (dry)	31	3,100	
Total ...	206	13,377	

The fellings last year amounted to—

Trees.	Cubic feet.
2,683	293,900

of which number 2,141 were felled by Messrs. Winton and Braidwood at Raiengarh and 542 were felled at Deota. The Inspector-General recommended that 750 trees should be felled annually in Deota, and it was calculated that these would yield 15,000 broad gauge sleepers, which are equivalent to 40,000 metre gauge sleepers. The 542 trees felled in 1879-80, together with the 56 trees felled early in 1880-81, yielded 42,579 metre gauge sleepers, so that the full outturn of sleepers for 1880-81 was obtained from 598 trees. The trees required for the outturn of 1881-82 will be shown in the returns of that year. The green trees felled were selected either in places where the nature of the ground and of the crop rendered it possible to clear spaces about 50 yards in diameter, so as to admit of natural reproduction, or where there was already sufficient young growth on the ground. No trees were selected on precipitous ground, and the felling was carried on from the high ground downwards. The season of the year at which coniferous trees are felled has not been considered to be a matter of importance.

123. *Scantlings cut and depôt transactions.*—The following scantlings were cut :—

	No. of pieces.	Cubic feet.
Chír scantlings	... 1,094	3,958
Deodar sleepers (metre gauge) ...	... 42,579	56,772
Total	... 43,673	60,730

The following scantlings were disposed of—

	No. of pieces.	Cubic feet.	
Chír	1,182	4,665	Used for slide.
Deodar sleepers (broad gauge) ...	59	204	Taken to depôts.
Ditto (metre gauge) ...	42,000	56,000	Taken to depôts.
Deodar beam	1	13	Taken to depôts.
Total	43,242	60,882	

The depôt transactions stand thus :—

Received—

	Number.	Cubic feet.
Taken to depôt (see above)	42,060	56,217
Deodar brought on stock at Delhi... ...	15	59
Ditto sleepers converted in depôt ...	300	500
Total ...	42,375	56,776

Disposed of—

Sold	45,970	68,977
Loss on conversion	300	1,146
Total ..	46,270	70,123

124. *Timber sold to Public Departments.*—The supply of 991 broad gauge sleepers to the Sindia State Railway is said to have resulted in a profit of Rs. 2,649, while 40,728 metre gauge sleepers supplied to the Rájputáná and Sindia State Railways produced an estimated profit of Rs. 16,880.

The subjoined table shows the results for 1879-80 and 1880-81 :—

Year.	Sleepers.			
	Cubic feet.	Revenue.	Cost.	Surplus.
		Rs.	Rs.	Rs.
1879-80	152,993	1,83,321	95,884	87,437
1880-81	58,112	85,420	65,891	19,529
Total ...	211,105	2,68,741	1,61,775	1,06,966

125. *Free supply of forest produce to villagers.*—The following is a list of the trees and planks cut and exported by villagers without payment :—

	Deodar.			Kail.	Saral.
	Green.	Dry.	Planks and karis.		
Jaunsár Báwar	3	...	320	30	100
Tiri-Garhwál...	10	2	...	...	100
Bashahr	20	...	...	790	500
Raiengarh	...	...	...	56	...
Dádi	...	...	...	...	...
Total ...	33	2	320	876	700

An endeavour will be made to make with the inhabitants of the native states and jágirs arrangements similar to those made in Jaunsár-Báwar, which have been found to work so successfully.

126. *Iron-making.*—No valuable deposit of iron ore has yet been discovered.

127. *Yield in material.*—The following statement shows the total yield in material and the amount realized :—

	No. or quantity.	*Amount realized.*
		Rs.
Timber of all kinds	68,977	89,564
Grazing dues	...	275
Confiscated, waif, and driftwood ...	...	153
Miscellaneous	...	39
Total Revenue		90,031

The yield of timber was 73,183 cubic feet less than that of 1879-80, which is accounted for by a reduction in the export of sleepers, amounting to 13,930 broad gauge and 7,454 metre gauge sleepers.

128. *Valuation Surveys.*—The enumeration of the mature crop of deodar trees in the Kotigádh and Surárs forests was completed by Mr. Lowrie, and the results are given in appendix (B). The total number of mature deodar trees in Bámsu (completed last year), Surárs, and Kotigádh is now estimated to be as follows :—

Bámsu	28,019
Surárs	10,481
Kotigádh	10,401

These numbers do not, however, correctly represent the number of trees which can be utilized, as a very large number of them are standing on such precipitous ground that they cannot be felled without risk of their completely breaking up. Exclusive of Mr. Lowrie's pay and allowances, this work cost Rs. 331.

FINANCIAL RESULTS.

129. *Receipts, charges, and surplus.*—In the following statement the receipts and expenditure have been so distributed as to show the results of the transactions under the three main heads from 1879-80. The figures relating to the Tons Division before its separation from Jaunsár have been extracted from the accounts of that division :—

Years.	Departmental timber operations.					Other revenue.			Formation, protection and improvement, V., VII., VIII, $\frac{3}{16}$ VI., $\frac{1}{16}$ B.	Nett surplus.
	Quantity of timber, cubic feet.		Receipts I.	Charges I., $\frac{3}{4}$ VI., $\frac{7}{16}$ B.	Surplus.	Receipts II., III., V.	Charges II., IX. $\frac{1}{16}$ VII., $\frac{1}{16}$ B.	Surplus.		
	Brought to depôt.	Sold								
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.
1879-80 ...	156,579	154,839	1,83,749	86,913	96,836	335	1,837	Deficit 1,502	20,424	74,910
1880-81 ...	56,776	68,977	89,562	63,188	26,374	469	643	Deficit 174	13,161	13,039
Total ...	213,355	223,816	2,73,311	1,50,101	1,23,210	804	2,480	Deficit 1,676	33,585	87,949

130. *Value of stock.*—The value of stock at the commencement of the year was Rs. 24,344, while at the close of the year it was reduced to Rs. 8,638. The timber, which is all deodar, is valued at selling prices, but the other stock, such as buildings, tools, &c., is valued at low rates. The reduction in value of stock is thus accounted for :—

	Rs.	Rs.
Decrease.		
Timber	15,092	
Instruments, tools, and furniture	1,115	
		16,207
Increase.		
Tents	110	
Buildings	390	
Miscellaneous	1	
		501
Nett decrease ...		15,706

131. *Outstandings.*—There are no outstandings of revenue. The outstandings due from contractors and disbursers at the close of the year was Rs. 4,272 less than at the commencement of the year. Of the Rs. 95,270, due at the close of the year, Rs. 90,000 were due from Messrs. Winton and Braidwood, whose accounts will shortly be adjusted.

132. *Financial results of the year's transactions.*—The actual nett surplus of the year was Rs. 13,039. From the table given in para. 129 it will be seen that after allowing for the receipts and expenditure for 1879-80, included in the accounts of the Jaunsár Division, the average nett surplus for the two past years has been Rs. 43,974. For a comparison of the receipts and expenditure with those of the previous year see para. 113. The surplus amounted to Rs. 181 per square mile or 4·5 annas per acre.

133. *Actual cost of production of metre gauge sleepers.*—The following statement shows the actual *cash* expenditure under A.I.(*a*), and the receipts on the last batch of 42,000 metre gauge sleepers :—

	Total cost.			*Cost per sleeper.*
	Rs.	a.	p.	Annas.
Felling and logging	2,185	5	5	0·83
Sawing	9,653	4	8	3·68
Land carriage	7,571	10	11	2·89
Sliding	690	13	4	0·26
Floating	27,872	14	0	10·62
Canal dues	5,965	10	2	2·27
Food supply	2,659	11	9	1·01
Temporary establishment	1,441	4	0	0·55
Repair of slide	1,031	10	3	0·39
Temporary roads	86	6	0	0·03
Miscellaneous	461	7	6	0·18
				22·71
Total ...	59,620	2	0	(Rs. 1-6-9)

The whole of the 42,000 sleepers were delivered at Delhi, where they realized or are expected to realize the undermentioned sums, *viz.* :—

		Rs.
40,313	paid for as first class sleepers at Rs. 2	80,626
888	rejected sleepers sold for	724
799	ditto unsold, may realize	700
	Total receipts ...	82,050

or an average of Rs. 1-15-3 each. This gives a total net profit of Rs. 22,430, or 8½ annas each.

It may here be mentioned that 100 marked sleepers were carefully measured before being put into the river, with a view to ascertain how much they would lose through scourage. Owing to a mistake only 12 of these were measured at Delhi; but the result, which was remarkably uniform, showed that there was no appreciable loss in length or breadth, while only ·15 of an inch was lost in thickness. If these results are confirmed by future measurements, it will probably suffice to cut the sleepers 6′ 3″ × 8¼″ × 4¼″ instead of 6′ 3″ × 8¼″ × 4½″ as at present.

Direction.

PROTECTION AND IMPROVEMENT.

134. *Buildings.*—The following expenditure was incurred:—

		Rs.
Timber shed (erected last year, but not then paid for)	...	210
Carpenter's shed repaired	...	14
Total	...	224

FINANCIAL RESULTS.

135. *Receipts, charges, and surplus.*—In the following statement the receipts and charges have been so distributed as to show the revenue and expenditure under the three main heads from 1879-80 :—

Years.	*Timber and other produce removed from the forests by Government agency.*			*Other revenue.*			*Formation, protection, and improvement of forests.*	Total deficit.
	Receipts.	Charges. UCB.	Deficit.	Receipts V.	Charges AIX., ⅛B.	Deficit.	Charges AVI., AVII., AVIII., ⅛B.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	...	8,524	8,524	...	2,928	2,928	37,928	49,380
1880-81 ...	...	12,538	12,538	14	4,851	4,837	18,329	35,704
Total ...	...	21,062	21,062	14	7,779	7,765	56,257	85,084

136. *Value of stock.*—The value of stock at the close of the year, Rs. 22,545, was Rs. 1,588 more than at its commencement, the increase being due on the following items :—

				Rs.
Instruments, tools, and furniture	...	...		553
Tents ...	...	...	...	717
Laboratory apparatus	...	...	...	108
Buildings ...	...	...	...	210
		Total	...	1,588

137. *Outstandings.*—The outstandings at the beginning of the year amounted to Rs. 566, while at the close of the year they were Rs. 1,357, of which Rs. 400 form an advance to Mr. Jeffries for current expenditure and Rs. 932 were advances of pay made to probationers.

CHAPTER III.

Protected, unreserved, and district forests.

138. *Protected, unreserved, and district forests.*—There are no forests of this class in the circle.

CHAPTER IV.

General Remarks.

139. *Prospects of increased revenue.*—Mr. O'Callaghan thinks that it would pay to establish a depôt in Dehra for the sale of sál timber or to fell sound wood in accessible parts of the forest. It is hoped that when the fellings suggested by the Inspector-General of Forests during his late visit are made, there will be a large increase in the revenue in the Dún. Mr. O'Callaghan thinks that the sale of semla gum may be developed, and that the system of farming leases for the collection of revenue on minor produce should be extended.

As the Inspector-General has suggested that timber operations in Sahâranpur should be still further reduced, the prospects of the division as regards surplus revenue are not very encouraging. The Divisional officer must develop the market for minor produce, dry wood, and bamboos.

As in Jaunsár two-thirds of the revenue are derived from sales of fuel to the Commissariat Department, and as the profit gained is extremely small, it does not seem likely that this division will pay a good surplus unless timber works are undertaken. The arrangements necessary for such works are under consideration.

It is hoped that the system of exporting annually a fixed quantity of deodar timber from the Tons Division, which quantity may be increased by drawing on the Bashâhr forests, will lead to a steady annual surplus in that division.

140. *Services of gazetted officers and of forest and office establishments.*—The officers in charge of divisions, and those working under their orders, have worked well. The forest and office establishments have, generally speaking, given satisfaction. The Conservator's office establishment has worked well under Mr. Jeffries, Head Assistant, whose control of the rapidly increasing work in the office is everything that could be desired.

FRED. BAILEY, MAJOR, R.E.,
Conservator of Forests, School Circle, N.-W. P.

The 29th July, 1881.

ANNUAL STATEMENTS.

FORM No. 45—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Area of reserved and leased forests, 1880-81.

Division or range.	Name of forest and civil district or territory.	*Area on 1st April, 1880.*		*Added during the year.*		*Excluded or transferred to other heads.*		*Total on 31st March, 1881.*		Number and date of notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Dehra Dún District.										
DEHRA DÚN DIVISION. Western Range...	Ambári							7	4,203		The total area of the division is correctly given; but the distribution of this area among the newly-formed forests is liable to correction.
	Chándpur							3	2,251		
	Dholkot							8	4,826		
	Jumna							14	9,213		
	Timli							31	19,723		
	Sherpur							22	13,935		
Central Range ...	Chandrabani							11	7,287		
	Balindawála							18	11,247		
	Bulawála							23	14,837		
	Nágsidh	278	177,779	...	...	...	...	23	14,725		
Eastern Siwalik Range.	Kánsrau							31	19,630		
	Motichur							35	22,671		
Eastern Dún Range.	Málkot							9	5,790		
	Tháno							14	8,937		
	Tirsál							14	9,112		
	Sainkot							15	9,392		
	Total, Dehra Dún Division ...	278	177,779	...	...	...	...	278	177,779		
	Saháranpur District.										
SAHÁRANPUR DIVISION.	Eastern Range							55	35,085	Patri Forest added by G. O. No. 756, dated 14th July, 1880.	Ditto ditto.
	Central Range	276	176,800	...	13,896	...	...	125	80,040		
	Western Range							118	75,571		
	Total, Saháranpur Division ...	276	176,800	...	13,896	...	...	298	190,696		

FORM No. 45—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Area of reserved and leased forests, 1880-81—(continued).

Division or range.	Name of forest and civil district or territory.	Area on 1st April, 1880.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March, 1881.		Number and date of notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
	Dehra Dún District.										
JAUNSÁR DIVISION. Southern Range,	Kálsi	7	4,596	...	...	...	20	7	4,576		The final areas of the Jaunsár-Báwar Forests have now been given by the Forest Survey Department, and the changes shown as having taken place during the year are merely corrections of the figures formerly given.
	Strips on Jumna and Tons.	...	201	...	...	...	36	...	165		
	Bairát	...	296	...	...	...	5	...	291		
	Amláwa	...	411	...	...	...	9	...	402		
	Tiri-Garhwál.										
	Rawai	3	1,600	...	...	...	...	3	1,600	* ...	*Approximate only.
	Jaunpur	2	1,280	...	...	...	...	2	1,280		
	Dehra Dún District.										
Deoban Range ...	Lokandi	11	7,042	...	...	...	67	11	6,975		
	Deoban	10	6,709	...	...	...	30	10	6,579		
	Ekra	9	5,468	...	...	...	155	8	5,313		
	Karámba	18	11,288	...	554	...	...	19	11,842		
	Konain	7	4,384	...	270	...	...	7	4,654		
Báwar Range ...	Riknár	8	4,866	...	1,584	...	...	10	6,450		
	Dháragádh	20	13,035	...	483	...	...	21	13,518		
	Dhármigádh	14	8,890	...	1,120	...	...	16	10,010		
	Bástil	5	2,925	...	160	...	...	5	3,085		
	Total, Jaunsár Division,	114	72,991	...	4,171	...	422	119	76,740		

FORM No. 45—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Area of reserved and leased forests, 1880-81—(concluded.)

Division or range.		Name of forest and civil district or territory.	Area on 1st April, 1880.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March, 1881.		No. and date of notification of additions and transfers, &c.	Remarks.
			Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
		Dehra Dún District.										
	Deogár Range ...	Deogár	18	11,515	...	...	...	277	17	11,238		The correct areas of the forests in the Dehra Dún district have now been given by the Forest Survey Department, causing corrections of 237 acres and +430 acres. The areas of the forests in jaghirs and native states are given approximately only.
		Jaghirs.										
		Raiengarh	4	2,560	...	...	...	...	4	2,560		
		Dádi	2	960	...	...	...	...	2	960		
		Total ...	24	15,035	...	...	...	277	23	14,758		
		Dehra Dún District.										
	Deota Range ...	Kunigádh	18	11,549	...	430	...	...	19	11,979		
TONS DIVISION ...		*Tiri-Garhwál.*										
		Deota	8	5,087	...	...	...	...	8	5,087		
		Bámsu	3	2,101	...	122	...	...	3	2,223		
		Surárs	2	1,280	...	...	...	283	2	997		
		Báshla	...	...	...	1,190	...	...	2	1,190		
		Dátmir	4	2,560	...	...	...	...	4	2,560		
		Total ...	35	22,577	...	1,742	...	283	38	24,036		
	Lambatách Range...	Lambatách	5	2,963	...	...	...	...	5	2,963		
		Kotigádh	...	100	...	4,012	...	...	6	4,112		
		Total	5	3,063	...	4,012	...	...	11	7,075		
	Bashábr ...	Bashábr	Unknown.						Unknown.			
		Total, Tons Division ...	64	40,675	...	5,754	...	560	72	45,869		
		Total ...	732	468,245	...	23,821	...	982	767	491,084		

FORM No. 40—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Area of plantations, 1880-81.

Division.	Name of plantation.	On 1st April, 1880.		During 1880-81.		On 31st March, 1881.		Remarks.
		Area.	Total cost.	Area added.	Cost.	Total area.	Total cost.	
		Acres.	Rs. a. p.	Acres.	Rs. a. p.	Acres.	Rs. a. p.	
Dehra Dún ...	Bulawála	5	329 0 0	...	...	5	329 0 0	
	Total ...	5	329 0 0	...	...	5	329 0 0	
Saháranpur...	Shámansur	4	136 0 0	...	...	4	136 0 0	
	Ferozpur	...	...	75	217 0 0	75	217 0 0	Watering and clearing lines.
	Rasulpur	...	...	5	17 0 0	5	17 0 0	¼ acre sown with shísham seed and the remainder with khair seed.
	Kálushahid	...	...	5	31 0 0	5	31 0 0	Planting 3,000 bamboo stumps.
	Ganjarban (khair)	...	...	20	31 0 0	20	31 0 0	Expenditure incurred in 1879-80. Omitted from last year's statement.
	Total ...	4	136 0 0	105	296 0 0	109	432 0 0	
Jaunsár ...	Katián (deodar)	229	2,947 0 0	...	...	229	2,947 0 0	
	Kónajn (ditto)	106	2,324 0 0	...	...	106	2,324 0 0	
	Kanásar (deodar and blue pine)	139	1,656 0 0	...	...	139	1,656 0 0	
	Bodyár (deodar, spruce, blue pine)	365	3,974 0 0	2	31 0 0	367	4,005 0 0	
	Koruwa (oak)	15	163 0 0	...	...	15	163 0 0	
	Deothát (deodar, spruce, blue pine, kharshu, chestnut)	143	1,773 0 0	1	77 0 0	144	1,850 0 0	
	Mátkángra (moru, oak)	51	699 0 0	...	...	51	699 0 0	
	Thona (spruce)	4	732 0 0	...	...	4	732 0 0	
	Landour Cantonment (deodar, cypress, spruce, blue pine, &c.)	50	2,212 0 0	...	525 0 0	50	2,767 0 0	Funds provided by the Military Department.
	Total ...	1,102	16,510 0 0	3	633 0 0	1,105	17,143 0 0	
Tons ..	Mandhol (deodar)	11	394 0 0	...	...	11	394 0 0	
	Total ...	11	394 0 0	...	...	11	394 0 0	
	GRAND TOTAL ...	1,122	17,369 0 0	108	929 0 0	1,230	18,298 0 0	

FORM No. 47—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Area of forest tracts protected from fire during the dry season of 1881 (*to accompany report*, 1880-81.)

Division.	Forest tracts.	*Up to 30th June*, 1880.		*During dry season of* 1881.					Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected	Amount expended.	Total cost up to 30th June, 1881.		
		Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	Rs.		
Dehra Dún ...	Bulawála Block	8,347	8,654	8,405	...	8,405	1,215	9,869	1872	All closed against grazing.
	Tháno	6,400	2,257	6,400	1	6,399	520	2,777	1877	
	Dáluwála	1,630	796	1,630	56	1,574	476	1,272	1878	Open to grazing from 1st July to 1st January
	Balindawála	6,512	475	6,512	176	6,336	484	959		
	Chandrabani, (called Assarori last year.)	4,717	813	4,717	6	4,711	507	1,320		
	Total ...	27,606	12,995	27,664	239	27,425	3,202	16,197		
Saháranpur ...	Lakarkot	8,490	1,698	8,504	...	8,504	915	2,613	1879	All closed against grazing.
	Ganjarban and Rasulpur ...									
	Andheri, Dholkhand, Malawali, portion of Bám.	...	...	10,080	35	10,045	690	690	1880	
	Kálushahid	1,486	161	1,000	245	755	298	460	1879	
	Daula	1,000	107	600	...	600	265	372		
	Patri plantation	...	...	75	...	75	128	128	About 1870	
	Total ...	10,985	1,967	20,259	280	19,979	2,296	4,263		
Jaunsár ...	*Southern Range.*									
	Kálsi, Bairát, Amláwa ...	1,567	308	2,500	...	2,500	1	309	1872	The area protected can only be estimated approximately. Of the fire-protected areas the following areas are closed against grazing :— 630 acres in Cantonment Blocks. 1,853 „ Lokandi. 2,401 „ Deoban. 400 „ Ekra. 769 „ Konain. Total ... 6,053 acres in fuel forests. 2,155 acres in Karámba. 3,801 „ Riknár. 3,087 „ Dháragádh. 683 „ Dharmigádh. 100 „ Bastil. Total ... 9,826 acres in timber forests. GRAND TOTAL ... 15,879 acres.
	Cantonment Block, forest garden.	...	...	630	3	627	24	24	1880	
	Rawai, Jaunpur	2,880	85	2,880	...	2,880	12	97	1872	
	Deoban Range.									
	Lokandi	4,338	389	5,132	...	5,132	57	446	1869	
	Deoban, Ekra, Konain ...	7,674	455	12,225	13	12,212	129	581	1872	
	Karámba	5,092	136	3,878	...	3,878	12	148		
	Báwar Range.									
	Riknár, Dháragádh, Dharmigádh, and Bastil.	11,269	615	11,469	...	11,469	223	838	1872	
	Total ...	32,820	1,988	38,714	16	38,698	458	2,416		

FORM No. 47—(Suggested.)

Forest Department, North-Western Provinces, School Circle.

Area of forest tracts protected from fire during the dry season of 1881 (*to accompany report*, 1880-81)—(concluded.)

Division.	Forest tracts.	*Up to 30th June*, 1880. Area actually protected	Total cost.	*During dry season of* 1881. Area attempted to be protected.	Failures.	Actually protected.	Amount expended	Total cost up to 30th June, 1881.	Year when protection commenced.	Remarks.
		Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	Rs.		
Tons ...	Dátmir	2,510	112	2,560	...	2,560	17	129	1872	All these areas are also closed against grazing. Raiengarh and Dádi closed from 1879 only.
	Kunigádh, Molta and part of Chátra.	3,221	643	3,226	200	3,026	38	681		
	Deogár, including Raiengarh and Dádi.	8,335	602	8,495	...	8,495	113	715		
	Deota, including Bámsu, Surárs, Báshla, Lambatách and part of the Kotigádh Forest.	9,481	864	12,721	253	12,468	274	1,138		
	Total ...	23,547	2,221	27,002	453	26,549	442	2,663		
	Grand Total ...	94,958	19,171	113,639	988	112,651	6,398	25,569		
	Charged in previous years	...	...	...	...	...	...	...	17,760	
	„ 1880-81	...	...	...	...	...	...	...	4,947	
	„ 1881-82	...	...	...	...	...	...	...	2,862	
						Total	...	...	25,569	

FORM No. 48—(Prescribed.)

Forest Department, North-Western Provinces, School Circle.

Prosecutions for breaches of forest rules, 1880-81.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorized felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other offences.		Total.				Remarks.
									Prosecutions.		*Convictions.*		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Dehra Dún Division.													
Dehra Dún district	...	...	6	17	...	...	...	...	6	17	6	13	
Saháranpur Division.													
Saháranpur district	...	...	3	10	...	...	...	...	3	10	2	6	
Jaunsár Division.													
Dehra Dún district	3	5	13	55	5	11	2	5	23	76	20	73	
Tons Division.													
Dehra Dún district	6	8	4	8	...	...	1	2	11	18	11	17	
Total ...	9	13	26	90	5	11	3	7	43	121	39	109	

FORM No. 49—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Summary of revenue of the different Divisions during 1880-81.

Budget heads—Receipts.	Direction.	Dehra Dún Division.	Jaunsár Division.	Tons Division.	Sahárunpur Division.	Total.
	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency :—						
(a.)—Timber	...	4,726 12 10	6,319 0 3	89,562 7 9	...	1,00,608 4 10
(b.)—Firewood and charcoal	...	459 0 0	21,056 7 4	...	...	21,515 7 4
(c.)—Bamboos	...	..	...	...	...	...
(d.)—Sandal wood	...	...	...	...	...	...
(e.)—Grass and other minor produce...	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers :—						
(a)—Timber	...	26,808 2 8	1,163 5 11	1 5 6	5,552 5 9	33,525 3 10
(b)—Firewood and charcoal	...	3,296 15 0	271 13 5	...	3,881 15 6	7,450 11 11
(c.)—Bamboos	...	6,743 7 6	55 8 0	...	3,404 5 9	10,203 5 3
(d.)—Grazing and fodder grass	...	8,154 1 6	773 14 0	275 4 3	9,273 11 3	18,476 15 0
(e.)—Other minor produce	...	3,963 2 9	247 3 0	...	4,964 2 0	9,174 7 9
III.—Confiscated, drift and waif wood	...	649 14 0	374 0 0	153 0 0	...	1,176 14 0
IV.—Revenue from forests not managed by Government :—						
(a)—Duty on foreign timber and other forest produce	...	...	...	...	...	...
(b)—Revenue from shared and private forests	...	...	...	...	...	...
V.—Miscellaneous :—						
(a)—Fines and forfeitures	...	25 4 6	84 9 6	31 10 0	1 0 0	142 8 0
(b.)—Refunds	...	6 11 7	...	...	...	6 11 7
(c)—Other sources	13 10 9	114 4 6	223 12 0	6 14 0	2 13 7	361 6 10
Total, Receipts ...	13 10 9	54,947 12 10	30,569 9 5	90,030 9 6	27,080 5 10	2,02,642 0 4

CALCUTTA:
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 49—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Summary of expenditure of the different Divisions for 1880-81.

Budget heads. A.—Conservancy and Works.	Direction.	Dehra Dún Division.	Jaunsár Division.	Tons Division.	Saháranpur Division.	Total
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency:—						
(a.)—Timber ...	...	309 0 7	1,814 2 6	59,573 1 6	...	61,696 4 9
(b.)—Firewood and charcoal	...	438 14 3	18,060 14 4	...	...	18,499 12 7
(c.)—Bamboos	...	...	...	...	...	...
(d.)—Sandal wood	...	...	...	...	...	...
(e.)—Grass and other minor produce...	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers	...	146 10 7	...	...	4,665 5 2	4,811 15 9
III.—Confiscated, drift and waif wood	...	10 11 6	...	...	0 12 0	11 7 6
IV.—Revenue from forests not managed by Government:—						
(a.)—Duty on foreign timber and other forest produce	...	...	...	...	...	...
(b.)—Revenue from shared and private forests ...	...	...	...	...	...	...
V.—Rent of leased forests and payments to shareholders in forests managed by Government...	...	1,851 0 0	...	6,650 0 0	...	8,501 0 0
VI.—Live Stock, Stores, Tools and Plant:—						
(a.)—Purchase of cattle...	...	...	...	...	...	...
(b.)—Feed and keep of cattle	...	1,515 8 5	...	...	662 2 11	2,177 11 4
(c.)—Stores, tools and plant	1,338 3 9	254 2 2	167 9 6	220 2 0	266 15 6	2,247 0 11
VII.—Communications and Buildings:—						
(a.)—Roads and bridges ...	...	2,893 4 1	3,230 6 1	1,125 10 5	5 0 0	7,254 4 7
(b.)—Buildings...	223 15 1	1,279 0 3	671 5 11	422 7 4	448 14 6	3,028 11 1
(c.)—Other works	...	...	33 5 6	1 11 0	...	35 0 6
VIII.—Demarcation, improvement and extension of forests:—						
(a.)—Demarcation	...	172 2 3	66 9 9	21 5 0	87 6 2	347 7 2
(b.)—Compensation for land and rights	...	...	27 2 0	...	125 4 1	152 6 1
(c.)—Surveys and working plans	...	71 13 3	3 5 0	330 8 11	...	405 11 2
(d.)—Plantations	...	...	...	...	...	...
(e.)—Protection from fire...	...	2,794 5 4	342 5 0	503 11 0	1,306 15 3	4,947 4 7
(f.)—Other works	49 9 0	921 0 3	1,530 8 1	121 1 0	360 4 0	2,982 6 4
IX.—Miscellaneous:—						
(a.)—Refunds ...	...	...	16 0 0	...	...	16 0 0
(b.)—Law charges	...	...	...	...	...	...
(c.)—Other charges	670 14 9	515 14 5	1,009 7 0	136 7 5	27 2 9	2,359 14 4
Total A.—Conservancy and Works ...	2,282 10 7	13,164 7 4	26,973 0 10	69,706 1 7	7,948 2 4	1,19,474 6 8

CALCUTTA:
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 49—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Summary of expenditure of the different Divisions for 1880-81.

Budget heads. B.—Establishment.	Direction.	Dehra Dún Division	Jaunsár Division.	Tons Division.	Saháranpur Division.	Total.
	Rs. a. p.	Rs. a p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a p.
Brought forward, Total A.—Conservancy and Works	2,282 10 7	13,164 7 4	26,973 0 10	69,106 1 7	7,948 2 4	1,19,474 6 8
I.—Salaries :—						
(a.)—Conservators	12,000 0 0	...	...	...	...	12,000 0 0
(b.)—Superior officers	9,386 2 3	11,250 0 0	6,200 0 0	3,559 5 5	5,650 0 0	36,045 7 8
(c.)—Subordinate forest and depôt establishments	630 0 0	3,214 0 10	2,236 0 0	2,169 0 1	1,476 9 6	9,785 10 5
(d.)—Office establishments	3,979 4 5	1,332 0 0	891 1 5	720 0 0	900 0 0	7,822 5 10
(e.)—Deputation and special allowances	115 7 1	...	...	...	...	115 7 1
II.—Travelling Allowances :—						
(a.)—Conservators	2,713 5 0	...	...	...	...	2,713 5 0
(b.)—Superior officers	3,297 6 3	1,408 8 0	1,407 7 2	902 2 9	1,139 15 0	8,155 7 2
(c.)—Subordinate forest and depôt establishments	216 0 0	..	...	60 0 8	40 10 5	336 11 1
(d.)—Office establishments	...	37 4 11	114 8 11	155 10 4	66 11 3	374 3 5
III.—Contingencies :—						
(a.)—Stationery	3 13 0	63 3 6	34 8 0	30 0 0	40 1 3	171 9 9
(b.)—Carriage of tents and records	200 15 0	226 7 0	37 0 0	116 4 0	190 14 8	771 8 8
(c.)—Rents, rates and taxes	...	360 0 0	...	...	365 4 0	725 4 0
(d.)—Pay of police guards	375 12 11	...	...	...	...	375 12 11
(e.)—Official postage	203 0 6	44 4 6	72 1 6	43 9 0	47 11 6	410 11 0
(f.)—Sundries	254 2 1	147 4 9	71 13 0	109 13 0	239 15 3	823 0 1
Total B.—Establishments	33,435 4 6	18,083 1 6	11,064 8 0	7,885 13 3	10,157 12 10	80,626 8 1
GRAND TOTAL OF EXPENDITURE	35,717 15 1	31,247 8 10	38,037 8 10	76,991 14 10	18,105 15 2	2,00,100 14 9

CALCUTTA:
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 50—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Account current for the year 1880-81.

Heads of account.	Rs. a. p.	Rs. a. p.	Heads of account.	Rs. a. p.	Rs. a. p.
To cash in hand on 1st April, 1880	...	4,633 11 4	By expenditure as per annual summary	...	2,00,100 14 9
„ revenue, as per annual summary	...	2,02,642 6 4	*Forest Cash Remittances (Local).*		
Service Funds			„ remittances to treasuries	...	78,674 7 2
„ Uncovenanted Service Family Pension Fund, Bengal ...	448 4 0		„ advances recoverable	...	86,370 6 5
„ Military Fund, Bengal	15 12 0		„ permanent advance	...	400 0 0
„ Military Orphan Fund, Bengal	13 2 0		*Account current with other Governments.*		
		477 2 0	„ Government of Bengal	150 0 0	
Forest Cash Remittances (Local).			„ Government of Panjab	2,161 10 0	
„ remittance from State Treasury	...	1,96,822 13 2			2,311 10 0
„ advances recoverable	...	85,981 2 8	*Inter-departmental transfers*		
„ permanent advance	...	400 0 0	„ P.W.D. State Railways: Western Rájputáná State Railway, Rs. 2,290 0 0; Sindia State Railway, Agra ... 3,964 0 0; Rájputáná and Sindia State Railway, 79,166 0 0	85,420 0 0	
Account current with other Governments.			„ Public Works Department (other branches)	17,766 6-10	
„ Government of Bombay	...	800 0 0	„ Military Department, Bengal	19,959 8 4	
Inter-departmental transfers.			„ Civil Department rewards for passing examinations ...	180 0 0	
„ Public Works Department (other branches)	7,130 5 10				1,23,325 15 2
„ Military Department, Bengal	69 0 6	7,199 6 4	„ cash in hand on 31st March, 1881	...	7,772 14 4
Total	...	4,98,956 3 10	Total	...	4,98,956 3 10

CALCUTTA :
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 51—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement of outstandings and liabilities on account of contractors and disbursers during 1880-81.

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Transactions debited and credited to "advances recoverable."								
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		
Direction	...	5,094 10 8	5,094 10 8	566 5 0	5,885 12 3	6,452 1 3	1,357 6 7	...	
Dehra Dún	...	216 10 8	216 10 8	16 10 8	320 0 0	336 10 8	120 0 0	...	
Jaunsár	...	23,478 5 5	23 478 5 5	1,125 0 0	27,253 8 8	28,378 8 8	4,900 3 3	...	
Tons	...	57,113 6 11	57,113 6 11	99.542 1 4	52,841 1 6	1,52.383 2 10	95,269 11 11	...	
Saháranpur	...	78 1 0	78 1 0	58 1 0	70 0 0	128 1 0	50 0 0	...	
Total, "Advances Recoverable"...	...	85,981 2 8	85 981 2 8	1,01,308 2 0	86,370 6 5	1,87,678 8 5	1,01.697 5 9	...	
	Transactions adjusted finally to service heads.								
Dehra Dún... ...	27 13 9	...	27 13 9	..	27 13 9	27 13 9	...	...	
GRAND TOTAL ...	27 13 9	85,981 2 8	86,009 0 5	1,01,308 2 0	86,398 4 2	1,87,706 6 2	1,01,697 5 9	...	

CALCUTTA:
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 52—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement of outstandings on account of revenue, 1880-81.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	
Direction		...	13 10 9	13 10 9	13 10 9	...	*Not shown in form No. 52 for 1879-80.
Dehra Dún		2,915 11 0	61,498 10 10	64,414 5 10	54,947 12 10	9,466 9 0	
Jaunsár		144 14 1	30,957 12 8	31,102 10 9	30,569 9 5	533 1 4	
Tons		...	90,030 9 6	90,030 9 6	90,030 9 6	...	
Saháranpur		*1,905 11 0	27,774 1 4	29,679 12 4	27,235 5 10	2,444 6 6	
	Total ..	4,966 4 1	2,10,274 13 1	2,15,241 1 2	†2,02,797 0 4	A. 12,444 0 10	

	Rs. a. p.
A From Public Departments ...	9,999 10 4
From other purchasers	2,444 6 6
Total ...	12,444 0 10

		Rs. a. p
† Amount realized as per annual summary	...	2,02,642 0 4
Written off as per Government order	...	155 0 0
Total	...	2,02,797 0 4

CALCUTTA:
The 20th June, 1881.

A. L. HOME,
Assistant Comptroller-General (Forests).

FORM No. 52(*a*)—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Financial results of the year 1880-81.

Division.	Timber and other produce removed from the Forests by Government Agency.			Other Revenue.			Formation, Protection, and Improvement of Forests.		Total.		Remarks.
	Receipts.	*Charges.*		Receipts.	*Charges.*		*Charges.*		Receipts.	Charges.	
		Budget heads.	Amounts.		Budget heads.	Amounts.	Budget heads.	Amounts.			
	Rs.		Rs.	Rs.		Rs.		Rs.	Rs.	Rs	
Direction ...	...	⅛B.	12,538	14	AIX., ⅛B.	4,851	AVI., AVII., AVIII., & ⅛B.	18,329	14	35,718	
Dehra Dún ...	5,186	AI., ¼AVI., $\frac{1}{16}$B.	2,320	49,762	AII., AIII., & AIX., ¼AVI., $\frac{7}{16}$B.	9,027	AV., AVII., AVIII., ⅛AVI., ½B.	19,901	54,948	31,248	
Saháranpur ...	...	...	...	27,080	AII., AIII., ⅛AVI., AIX., ½B.	10,237	¼AVI., AVII., AVIII., ⅛B.	7,869	27,080	18,106	
Jaunsár ...	27,375	AI., ¾AVI., $\frac{7}{16}$B.	24,841	3,194	AII., AIX., $\frac{1}{16}$AVI., $\frac{1}{16}$B.	1,727	AV., AVII., AVIII., $\frac{3}{16}$AVI., ⅛B.	11,469	30,569	38,037	
Tons ...	89,562	AI., ¾AVI., $\frac{7}{16}$B.	63,188	469	AVII., AIX., $\frac{1}{16}$AVI., $\frac{1}{16}$B.	643	AV., AVII., AVIII., $\frac{3}{16}$AVI., ½B.	13,161	90,031	76,992	
Total ...	1,22,123	...	1,02,887	80,519	...	26,485	...	70,729	2,02,612	2,00,101	

FORM No. 53—(Suggested.)

Forest Department, North-Western Provinces, School Circle.

Statement of trees felled during the year 1880-81.

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year.		Felled during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
Dehra Dún ...	Eastern Dehra Dún	Bulawála ...	Sál ...	2,500	2,521	...	...	2,500	2,521	Converted into tors, ballas, and ballis, &c.	2,500	2,521	...	...	
			Kokát ...	505	5,050	...	...	505	5,050	Burnt into charcoal.	505	5,050	...	...	
	Tháno ...	Tháno ...	Sál ...	...	...	35	437	35	437	Logged	35	437	...	...	
			Haldu ...	...	...	6	86	6	36		1	6	5	30	
	Eastern Dún ...	Nágaidh ...	Sál ...	...	...	40	500	40	500		40	500	...	...	
			Tún ...	...	...	10	156	10	156		10	156	...	...	
	Western Dún ...	Dholkot ...	Sál ...	...	...	35	500	35	500		35	500	...	...	
			Tún ...	...	...	10	156	10	156		1	14	9	142	
			Total ...	3,005	7,571	136	1,785	3,141	9,356		3,127	9,184	14	172	
Saháranpur ...	...	...	...	...	...	*Nil*	...	...	...	...	...	*Nil*	...	...	
Jaunsár ...	Konain ...	Bhujkoti ...	Deodar ...	202	24,745	...	...	202	24,745	...	...	...	202	24,745	
		Pánikinál ...		225	25,467	...	...	225	25,467	...	...	...	225	25,467	
		Karáli ...		...	...	15	543	15	543	Sawn into scantlings.	15	543	...	...	
	Ekra ...	Hajáwá ...	Fir ...	...	...	499	49,900	499	49,900	Cut into fuel ...	499	49 900	...	...	
	Lokandi ...	Bodyár ...	Deodar ...	...	...	42	1,000	42	1,000	Sawn into karis and planks.	42	1,000	...	...	
		Asmári ...	Fir ...	...	...	203	6,090	203	6,090	Cut into fuel ...	203	6,090	...	...	
	Deoban ...	Ranjátra ...	Do. ...	...	...	198	9,800	198	9,800		198	9,800	...	...	
			Oak ...	...	...	8	400	8	400		8	400	...	...	
		Mátkángra ...	Do. ...	...	...	39	1 208	39	1,208		39	1,208	...	...	
		Mohna ...	Do. ...	...	...	332	12,547	332	12,547	Made charcoal & fuel.	332	12,547	...	...	
			Fir ...	...	...	76	6,800	76	6,800	Cut into fuel ...	76	6,800	...	...	
		Thona ...	Do. ...	...	...	224	11,200	224	11,200		224	11,200	...	...	
	Amláwa ...	Korwa ...	Oak ...	...	...	132	2,640	132	2,640	...	...	...	132	2,640	
	Cantonment forest, Chakráta.	Lurli ...	Do. ...	...	...	4	200	4	200	Cut into fuel ...	4	200	...	...	
			Total ...	427	50,212	1,772	102,328	2,199	152,540		1,640	99,688	559	52,852	

FORM No. 53—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement of trees felled during the year 1880-81.

Division.	Forest range.	Locality.	Description of trees.	On hand from previous year.		Felled during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
Tons ...	Deota ...	Temple block ...	Deodar (green).	26	2,600	21	2,100	47	4,700	Sawn into sleepers.	47	4,700	...	...	
		Dopta „	Do. („) ...	291	29,100	4	2,172	295	31,277		295	31,277	...	...	
			Do. (dry) ...	225	22,500	31	3,100	256	25,600		256	25,600	...	...	
		Thadiár „ ...	Chir ...	...	...	150	6,000	150	6,000	Sawn into scantlings.	150	6,000	...	...	
			Total ...	542	54,200	206	13,377	748	67,577		748	67,577	...	...	
			GRAND TOTAL...	3,974	111,983	2,114	117,490	6,088	229,473		5,515	176,449	573	53,024	
			Description of trees.	1st class 6′ in girth.	2nd class 6′-4½′ in girth.	3rd class 4½′-3′ in girth.	4th class 3′-1½′ in girth.	5th class under 1½′.	Total of each kind of tree.						
			Sál ...	35	50	25	...	...	110						
			Tun ...	15	5	...	...	...	20						
			Húldu ...	5	1	...	...	...	6						
			Deodar ...	65	24	14	10	...	113						
			Chír ...	80	40	18	12	...	150						
			Oak ...	112	130	145	95	33	515						
			Fir ...	525	350	200	125	...	1,200						
			Total of each class.	837	600	402	242	33	2,114						

FORM No. 54—(SUGGESTED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement of logs, sleepers, and other scantlings cut and exported during the year 1880-81.

Division.	Forest range.	Locality.	Description of timber and scantling.	On hand from previous year.		Cut during current year.		Total.		Disposed of during current year.			Closing balance.		Remarks.
				No.	C. ft.	No.	C. ft.	No.	C. ft.	How disposed of.	No.	C. ft.	No.	C. ft.	
Dehra Dún ...	Eastern Dún ...	Bulawála ...	Sál tors and poles.	...	...	540	1,602	540	1,602	Carried to depôt.	540	1,602	...	...	
			Sal ballis ...	...	...	2,000	919	2,000	919		2,000	919	...	...	
			Charcoal (mds) ...	...	...	...	1,000	...	1,000		...	1,000	...	...	
		Tháno ...	Sál logs ...	...	...	35	437	35	437		35	437	...	...	
			Haldu logs ...	...	...	1	6	1	6		1	6	...	...	
		Nágsidh ...	Sál logs ...	...	...	40	500	40	500		40	500	...	...	
			Tún logs ...	...	...	10	156	10	156		10	156	...	...	
		Song ...	Ditto ...	...	...	1	14	1	14		1	14	...	...	
	Western Dún ...	Dholkot ...	Sál logs ...	...	...	35	500	35	500		35	500	...	...	
		Total ...	Timber ...	...	...	2,662	4,134	2,662	4,134	...	2,662	4,134	...	...	
			Charcoal (mds),...	...	...	...	1,000	...	1,000	...	...	1,000	...	...	
Saháranpur ...	...	...	...	...	*Nil*	...	...	...	...	...	...	*Nil*	...	...	
Jaunsár ...	Deoban ...	Kanjátra and Mohna.	Oak fuel ...	...	*1,033	...	400	...	1,433	Dryage ...	...	100	...	...	*Equivalent to 1,550 cubic feet of *stacked fuel.*
										Sold ...	...	267	...	...	
										Chakráta depôt ...	...	1,066	...	...	
		Ditto ...	Fir fuel ...	...	†21,666	...	10,866	...	32,532	Ditto ...	...	32,532	...	...	†Equivalent to 32,500 cubic feet of *stacked fuel* (all fuel is now given in *solid* cubic feet).
		Mátkángra ...	Oak fuel ...	...	...	...	866	...	866	Ditto ...	...	866	...	...	
		Ditto ...	Charcoal ...	...	...	...	509	...	509	Ditto ...	...	489	...	20	
		Thona ...	Fir fuel ...	...	...	...	12,500	...	12,500	Ditto ...	...	12,500	...	...	
		Asmári ...	Ditto ...	...	...	...	6,600	...	6,600	Ditto ...	...	3,753	...	2,847	
		Hajáwá ...	Ditto ...	...	...	...	67,866	...	67,866	Ditto ...	...	19,187	...	48,679	
		Mohna ...	Ditto ...	...	...	...	6,800	...	6,800	...	...	...	...	6,800	
		Ditto ...	Oak fuel ...	...	...	...	9,867	...	9,867	...	...	...	...	9,867	
		Ditto ...	Charcoal ...	...	...	...	438	...	438	Chakráta depôt ...	...	288	...	...	
										Deoban depôt ...	...	150	...	...	
		Konain ...	Deodar karis ...	...	...	169	251	169	251	Chakráta depôt ...	60	134	...	...	
										Deoban depôt ...	109	117	...	...	
		Ditto ...	Do. planks ...	...	...	319	265	319	265	Ditto ...	319	265	...	...	
		Bodyár ...	Do. karis ...	...	...	165	252	165	252	Making huts ...	165	252	...	...	
		Ditto ...	Do. planks ...	...	...	681	556	68	556	Ditto ...	681	556	...	...	
	Southern range...	Cantonment ...	Oak fuel ...	...	...	...	233	...	233	Chakráta depôt ...	...	233	...	...	
			Total ...	...	22,699	1,334	118,269	1,334	140,968	...	1,334	72,755	...	68,213	

Tons ...	Deota ...	Thadiár block,	Chír beams ...	37	208	184	936	221	1,144	Used in repairing slide.	201	1,045	20	99		
			Do. karis ...	21	28	56	75	77	103	Ditto ...	77	103	...	...		
			Do. planks ...	...	...	142	99	149	99	Ditto ...	142	99	...	...		
			Do. shikanjas ...	100	770	712	2,848	812	3,618	Ditto ...	762	3,418	50	200		
		Rámpur Mandi.	B. G. deodar sleepers (IInd class).	16	55	...	...	16	55	Transferred to Delhi,	16	55	...	...		
			B. G. (pieces) ...	37	37	...	...	37	37	...	...	...	37	37		
			M. G. deodar sleepers (IInd class).	245	327	...	...	245	327	...	...	...	245	327		
			Deodar beams ...	16	154	...	...	16	154	Sent to depôt ...	1	13	15	141		
		Dágpathar ...	B. G. deodar sleepers.	55	191	...	...	55	191	Transferred to Delhi,	43	149	12	42		
			M. G. ditto ...	735	1,225	...	...	735	1,225	...	...	...	735	1,225		
		Raiengarh ...	B. G. ditto ...	47,500	164,930	...	...	47,500	164,930	...	...	...	47,500	164,930		
			M. G. ditto ...	15,036	25,060	...	...	15,036	25,060	...	...	...	15,036	25,060		
		Temple and Dopta blocks.	M. G. ditto ...	...	...	42,579	56,772	42,579	56,772	Transferred to Delhi and Dún.	42,000	56,000	579	772		
			Total ...	63,798	1,92,985	43,673	60,730	107,471	253,715	...	43,242	60,882	64,229	192,833		
			GRAND TOTAL...	63,798	215,684	47,669	183,133 1,000	111,467 maunds.	398,817 1,000	... maunds.	47,238	137,771 1,000	64,229 maunds.	2,61,046		

ABSTRACT.

Sál ...	...	...	2,650	3,958	Sál ...	2,650	3,958			Taken to depôt.
Tún ...	...	...	11	170	Tún ...	11	170			
Haldu ...	...	...	1	6	Haldu ...	1	6			
Deodar ...	...	...	1,334	1,324	Deodar ...	489	529			
Do. (sleepers),	...	...	42,579	56,772	Do (sleepers) ...	42,059	56,204			
Chír ...	...	...	1,094	3,958	Fuel ...	...	70,137			
Fuel ...	...	...	...	1,15,998	Charcoal ...	...	927			
Charcoal ...	...	...	...	947 1,000 maunds.			1,000	maunds.		
					Fuel ...	...	267			Sold in forest.
					Deodar ...	846	803			Used departmentally.
					Chír ...	1,182	4,665			
					Fuel ...	...	100			Loss by dryage.
Total ...	...	...	47,669	183,133 1,000 maunds	Total ...	47,238	137,771			
					Charcoal ...	...	1,000	maunds.		

FORM No. 55—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement of timber and other produce brought to depôt from the different Forest Divisions, 1880-81.

Division.	Forest.	Description of timber, &c.	Number of Pieces.	Number of Cubic feet.	Total of each division. Pieces.	Total of each division. Cubic feet.
Dehra Dún ...	Bulawála ...	Sál tors and poles ...	540	1,602		
		Sál ballis	2,000	919		
	Tháno and Nágsidh ...	Sál logs	110	1,437		
		Tún „	11	170		
	Tháno ...	Haldu logs ...	1	6		
					2,662	4,134
	Buláwala ...	Charcoal, maunds ...	...	...	...	1,000
Saháranpur ...	*Nil*	...	*Nil*	...	*Nil.*	
	Chakráta Depôt.					
Jaunsár ...	Konain ...	Deodar karis ...	60	134		
	Formerly condemned,	Rai karis ...	2	4		
	Kanjátra, Mohna and Mátkángra.	Oak fuel ...	...	1,932		
	Lurli (cantonment),	Oak „ ...	...	233		
	Kanjátra, Thona and Asmári.	Fir „ ...	...	48,785		
	Hajáwa ...	Ditto ...	...	19,187		
	Rawáná ...	Mixed fuel ...	...	105		
	Commissariat Department.	Fir „ ...	...	984		
	Mátkángra and Mohna.	Charcoal ...	...	777		
	Dún	Sál balli ...	1	1		
	Deoban Depôt.					
	Konain ...	Deodar karis ...	109	117		
		Ditto planks ...	319	965		
	Mohna ...	Charcoal ...	...	150		
					491	72,674
Tons ...	Deota ...	Deodar sleepers (metre-gauge).	42,300	56,500		
	Rupin ...	Deodar beams ...	16	72		
	Deota ...	Deodar sleepers (broad-gauge).	59	204		
					42,375	56,776
		Total ...	...	...	45,528	133,584
		Maunds ...	...	...	...	1,000

ABSTRACT.

Sál	2,650	3,958	From forests.
Tún	11	170	
Haldu	1	6	
Deodar	489	529	
Do. (sleepers) ...	42,059	56,204	
Fuel	...	70,137	
Charcoal	...	927	
	...	1,000	Maunds.
Sál	1	1	Bought.
Rai	2	4	Previously condemned.
Deodar	15	59	Taken on stock at Delhi.
Do. (sleepers) ...	300	500	By conversion in depôt.
Fuel	...	984	Excess on remeasurement.
Do.	...	105	Taken on stock at rifle range.
Total ...	45,528	133,584	
Maunds ...	...	1,000	

FORM No. 56-A (PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Account of timber and other produce, 1880-81.

Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Balance in hand at commencement of year—				
Dehra Dún ... Sál beams ...	37	276		
Dehra Dún ... „ other kinds ...	11,297	7,191		
Dehra Dún ... Timber, all other kinds ...	165	275		
			11,499	7,742
Dehra Dún ... Charcoal Mds.	...	...	...	298
Saháranpur		*Nil.*		
Jaunsár ... Deodar timber (all kinds) ...	8,624	17,342		
Jaunsár ... Rai „ „ ...	3,152	3,198		
Jaunsár ... Shisham planks ...	8	10		
Jaunsár ... Kail karis ...	26	35		
			11,810	20,585
Jaunsár ... Oak fuel (in solid cubic feet) ...	...	26,933		
Jaunsár ... Fir „ (ditto)...	...	16,007		
Equal to 39,950 and 24,010 Tons ... Cubic feet of stacked fuel respectively.	...	...	...	42,640
Tons ... Deodar sleepers (broad gauge).	3,651	12,677		
Tons ... „ ,(metre gauge) ...	1,045	1,742		
			4,696	14,419
		Total ...	28,005	85,386
		Maunds ...	...	298
Received during the year.				
Dehra Dún ... Sál logs ...	110	1,437		
Dehra Dún ... „ other kinds ...	2,540	2,521		
Dehra Dún ... Tun logs ...	11	170		
Dehra Dún ... Haldu ...	1	6		
			2,632	4,134
Dehra Dún ... Charcoal Mds.	...	1,000	...	1,000
Saháranpur		*Nil.*		
Jaunsár ... Deodar timber (all kinds) ...	488	516		
Jaunsár ... Rai „ („) ...	2	4		
Jaunsár ... Sál balli ...	1	1		
			491	521
Jaunsár ... Fuel ... Oak ...	...	2,165		
Jaunsár ... Fuel ... Fir ...	...	68,956		
Jaunsár ... Fuel ... Mixed ...	...	105		
Jaunsár ... Charcoal ...	...	927	...	72,153

Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Removed by purchasers.				
Dehra Dún ... Sál beams ...	37	276		
Dehra Dún ... „ logs ...	110	1,437		
Dehra Dún ... „ other kinds ...	13,384	8,353		
Dehra Dún ... Tún logs ...	11	170		
Dehra Dún ... Haldu „ ...	1	6		
Dehra Dún ... Timber, all other kinds ...	165	275		
			13,708	10,517
Dehra Dún ... Charcoal, Mds.	...	918	...	918
Saháranpur		*Nil.*		
Jaunsár ... Deodar timber (all kinds) ...	443	546		
Jaunsár ... Rai „ („) ...	1,429	2,100		
Jaunsár ... Sál balli ...	1	1		
Jaunsár ... Shisham planks ...	4	6		
			1,877	2,653
Jaunsár ... Fuel ... Oak ...	...	20,232		
Jaunsár ... Fuel ... Fir ...	...	67,325		
Jaunsár ... Fuel ... Mixed ...	...	105		
Jaunsár ... Charcoal ...	...	927	...	88,589
Tons ... Deodar sleepers (broad gauge)	3,288	11,415		
Tons ... Deodar broad gauge sleepers converted into scantlings.	120	312		
			3,408	11,727
Tons ... Deodar sleepers (metre gauge)	42,546	57,178		
Tons ... „ beams ...	16	72		
			42,562	57,250
		Total ...	61,555	1,70,736
		Maunds ...	...	918
Lost and broken.				
Jaunsár ... Fuel ... Oak ...	...	2,968		
Jaunsár ... Fuel ... Fir ...	...	287	...	3,255
Loss by conversion.				
Tons ... Loss in conversion of 120 broad gauge sleepers into scantlings.	...	104		
Tons ... Loss in conversion of 300 broad gauge sleepers into metre gauge sleepers.	300	1,042	300	1,146

ANNUAL FORM No. 56—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Account of timber and other produce, 1880-81.

Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Tons ... Deodar sleepers (broad gauge),	59	204		
" " (metre "),	42,300	56,500		
" beams of sizes ...	16	72		
			42,375	56,776
		Total ...	45,528	133,584
		Maunds ...	...	1,000
GRAND TOTAL ...	...	...	73,533	218,970
		Maunds ...	...	1,298
Received.			ABSTRACT.	
Sál and other timber	3 169	4,727		
Deodar sleepers (broad gauge)	59	204		
" (metre ")	42,300	56,500		
Fuel	...	71,226		
Charcoal ... Cubic feet	...	927		
			45,528	133,584
Charcoal ... Maunds	...	1,000	...	1,000

Particulars.	Pieces. Number.	Pieces. Cubic feet.	Total. Number.	Total. Cubic feet.
Used by Department.				
Jaunsár ... Deodar timber (all kinds) ...	1,007	945		
Jaunsár ... Rai " (") ...	17	9		
			1,024	954
		Total ...	1,324	5,355
Balance in hand at close of the year.				
Dehra Dún ... Sál, other kinds ...	453	1,359	453	1,359
Dehra Dún ... Charcoal Mds.	...	380	...	380
Jaunsár ... Deodar timber (all kinds) ...	7,662	16 367		
Jaunsár ... Rai " (") ...	1,708	1,093		
Jaunsár ... Shisham planks ...	4	4		
Jaunsár ... Kail karis ...	26	35		
			9,400	17,499
Jaunsár ... Fuel ... Oak ...	...	5,599		
Jaunsár ... Fuel ... Fir ...	...	17,350		
			...	22,949
Tons ... Deodar sleepers (broad gauge)	2	7		
Tons ... " " (metre ")	799	1,065	801	1,072
		Total ..	10,654	42,879
		Charcoal, mds.	...	380
GRAND TOTAL ...	...	...	73,533	218,970
		Maunds ...	...	1,298
Sold.				
Sál and other timber	15,601	13,242		
" sleepers (broad gauge)	3,288	11,415		
" " (metre ")	42,546	57,178		
Deodar scantlings (from sleepers)	120	312		
Fuel	...	87,662		
Charcoal ... Cubic feet	...	927		
			61,555	170,736
Charcoal ... Maunds	...	918	...	918
Lost, broken, and used by department.				
Timber	1,024	954		
Loss on conversion	300	1,146		
Fuel	...	3,255	1,324	5,355
		Total ...	62,879	176,091
		Maunds ...	...	918

FORM No. 59—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Statement showing the revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1880-81.

Name of department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost of Forest Department. Timber expenses under A.I.	Cost of Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost of Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.	Remarks.
			Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		
Jaunsár Division. Commissariat Department, Chakráta.	Oak fuel ...	16,570′	Various.		4,595 0 0	4,595 0 0	...						
	Fir fuel ...	65,277′		,,	15,333 0 0	15,333 0 0	...						
	Charcoal ...	588′	0 8 0	Cubic foot	294 0 0	294 0 0	...						
					20,222 0 0	20,222 0 0	...	16,000 0 0	3,773 0 0	19,773 0 0	449 0 0		
Executive Engineer, Chakráta Division, Military Works	Deodar karis...	77=129′	1 8 0	Cubic foot,	194 0 0	106 0 0	88						
	Rai planks ...	418=290′	1 0 0	Each ...	418 0 0	...	418						
	Do. karis ...	5,058=5,308′	Various.		5,282 0 0	5,255 0 0	27						
					5,894 0 0	5,361 0 0	533	1,314 0 0	993 0 0	2,307 0 0	3,054 0 0		
		Total ...	...	...	26,116 0 0	25,583 0 0	533	17,314 0 0	4,766 0 0	22,080 0 0	3,503 0 0		
Tons Division. Sindia State Railway ...	Deodar sleepers (B. G.) ..	991=3,441′	4 0 0	Each ...	3,964 0 0	3,964 0 0	...	1,259 0 0	56 0 0	1,315 0 0	2,649 0 0		
Western Rájputáná State Railway (Northern Section).	Do. do. (M. G.)	1,145=1,908′	2 0 0	,,	2,290 0 0	2,290 0 0	...	1,668 0 0	21 0 0	1,689 0 0	601 0 0		
Rájputáná State Railway (Open Line).	Do. do. do....	39,583=52,763′	2 0 0	,,	79,166 0 0	79,166 0 0	...	59,632 0 0	3,255 0 0	62,887 0 0	16,279 0 0		
		Total ...	...	...	85,420 0 0	85,420 0 0	...	62,559 0 0	3,332 0 0	65,891 0 0	19,529 0 0		
		GRAND TOTAL...	...	...	1,11,536 0 0	1,11,003 0 0	533	79,873 0 0	8,098 0 0	87,971 0 0	23,032 0 0		
Summary. Commissariat Department,	Fuel and charcoal	82,435′	...	...	20,222 0 0	20,222 0 0	...	16,000 0 0	3,773 0 0	19,773 0 0	449 0 0		
Chakráta Division, Military Works.	Timber ...	5,558=5,727′	...	...	5,894 0 0	5,361 0 0	533	1,314 0 0	993 0 0	2,307 0 0	3,054 0 0		
State Railways ...	Deodar sleepers (B G.)	991=3,441′	...	...	85,420 0 0	85,420 0 0	...	62,559 0 0	3,332 0 0	65,891 0 0	19,529 0 0		
	Do. Do. (M. G.)	40,728=54,671′											
		Total ...	...	...	1,11,536 0 0	1,11,003 0 0	533	79,873 0 0	8,098 0 0	87,971 0 0	23,032 0 0		
									Deduct surplus (or deficit) ...		*Nil.*		
									Balance for the Department ...		23,032 0 0		

FORM No. 60.

Forest Department, North-Western Provinces, School Circle.

Abstract showing the value of timber and of live and dead stock for the year 1880-81.

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value	No.	Value.	No.	Value.	
		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	
Direction Division.											
1. Surveying and other instruments.	23	217 0 0	10	100 0 0	33	317 0 0	...	...	33	317 0 0	
2. Machinery ...	...	...	...	...	...	...	...	...	...	...	
3. Tools	3	11 0 0	21	27 0 0	24	38 0 0	...	...	24	38 0 0	
4. Office furniture ...	44	394 0 0	16	426 0 0	60	820 0 0	...	...	60	820 0 0	
5. Tents	3	300 0 0	6	717 0 0	9	1,017 0 0	...	...	9	1,017 0 0	
6. Buildings, building materials, &c.	6	20,035 0 0	1	210 0 0	7	20,245 0 0	...	...	7	20,245 0 0	
7. Miscellaneous ...	...	...	10	108 0 0	10	108 0 0	...	...	10	108 0 0	
Total ...	79	20,957 0 0	64	1,588 0 0	143	22,545 0 0	...	...	143	22,545 0 0	
Dehra Dún Division.											
Sál beams	37	552 0 0	...	171 0 0	37	723 0 0	37	723 0 0	...	...	
„ logs	...	...	110	1,093 0 0	110	1,093 0 0	110	1,093 0 0	...	...	
„ other kinds ...	11,297	50 0 0	2,540	436 0 0	13,837	486 0 0	13,384	373 0 0	453	113 0 0	
Timber, all other kinds,	165	10 0 0	12	52 0 0	177	62 0 0	177	62 0 0	...	...	
Total Timber ...	11,499	612 0 0	2,662	1,752 0 0	14,161	2,364 0 0	13,708	2,251 0 0	453	113 0 0	
Charcoal, Maunds...	298	119 0 0	1,000	500 0 0	1,298	619 0 0	918	459 0 0	380	160 0 0	
1. Surveying and other instruments.	16	158 0 0	...	...	16	158 0 0	...	...	16	158 0 0	
2. Machinery ...	...	...	...	...	...	...	...	...	...	...	
3. Tools ...	1,166	501 0 0	53	48 0 0	1,219	549 0 0	2	1 0 0	1,217	548 0 0	
4. Office furniture ...	30	283 0 0	1	21 0 0	31	304 0 0	...	...	31	304 0 0	
5. Tents ...	5	361 0 0	3	196 0 0	8	557 0 0	2	91 0 0	6	466 0 0	
6. Buildings, building materials, &c.	27	1,348 0 0	4	820 0 0	31	2,168 0 0	1	6 0 0	30	2,162 0 0	
7. Miscellaneous ...	118	185 0 0	...	...	118	185 0 0	...	...	118	185 0 0	
Elephants ...	2	4,800 0 0	...	...	2	4,800 0 0	...	...	2	4,800 0 0	
	1,364	7,636 0 0	61	1,085 0 0	1,425	8,721 0 0	5	98 0 0	1 420	8,623 0 0	
Total ...	13,161	8,367 0 0	3,723	3,337 0 0	16,884	11,704 0 0	14,631	2,808 0 0	2,253	8,896 0 0	
Saháranpur Division.											
1. Surveying and other instruments	4	27 0 0	4	18 0 0	8	45 0 0	...	...	8	45 0 0	
2. Machinery ...	...	...	...	...	...	...	...	...	...	...	
3. Tools ...	569	309 0 0	269	142 0 0	838	451 0 0	...	...	838	451 0 0	
4. Office furniture ...	52	297 0 0	3	33 0 0	55	330 0 0	4	1 0 0	51	329 0 0	
5. Tents ...	2	125 0 0	5	115 0 0	7	240 0 0	...	...	7	240 0 0	
6. Buildings, building materials, &c.	23	848 0 0	8	675 0 0	31	1,523 0 0	6	30 0 0	25	1,493 0 0	
7. Miscellaneous ...	137	335 0 e	151	492 0 0	288	827 0 0	...	...	288	827 0 0	
Elephant ...	1	2,000 0 0	...	...	1	2,000 0 0	...	...	1	2,000 0 0	
Total ...	788	3,941 0 0	440	1,475 0 0	1,228	5,419 0 0	10	31 0 0	1,218	5,385 0 0	

Jaunsár Division.											
Deodar karis and planks.	8,624	17,501 0 0	468	774 0 0	9,112	16,275 0 0	1,450	2,238 0 0	7,668	16,637 0 0	
Rai karis, planks and ballis.	3,152	2,441 0 0	2	4 0 0	3,154	2,445 0 0	1,446	2,109 0 0	1,708	336 0 0	
Kail karis and planks ...	26	25 0 0	...	...	26	25 0 0	...	...	26	25 0 0	
Shisham and tún planks.	8	8 0 0	...	...	8	8 0 0	4	4 0 0	4	4 0 0	
Sál balli	...	...	1	1 0 0	1	1 0 0	1	1 0 0	...	...	
Oak and fir fuel (cubic feet).	42,640	9,912 0 0	71,121	16,533 0 0	113,761	26,445 0 0	90,812	21,557 0 0	22,949	4,888 0 0	
Mixed fuel (ditto),	...	...	105	25 0 0	105	25 0 0	105	25 0 0	...	...	
Charcoal (ditto).	...	..	927	230 0 0	927	230 0 0	927	230 0 0	...	...	
Total ...	54,450	29,887 0 0	72,644	17,567 0 0	127,094	47,454 0 0	94,745	26,164 0 0	32,349	21,290 0 0	
1. Surveying and other instruments.	13	86 0 0	...	...	13	86 0 0	5	25 0 0	8	61 0 0	
2. Machinery ...	3	19 0 0	...	...	3	19 0 0	...	...	3	19 0 0	
3. Tools	1,007	2 330 0 0	343	691 0 0	1,350	3,021 0 0	*192	85 0 0	1,158	2,936 0 0	* 61 transferred to Tons Division.
4. Office furniture ...	22	93 0 0	4	10 0 0	26	103 0 0	10	2 0 0	16	101 0 0	
5. Tents ...	2	150 0 0	1	51 0 0	3	201 0 0	...	...	3	201 0 0	
6. Buildings, &c. ...	24	20,692 0 0	3	900 0 0	27	21,592 0 0	...	...	27	21,592 0 0	
7. Miscellaneous ...	39	231 0 0	2	2 0 0	41	233 0 0	6	83 0 0	35	150 0 0	
	1,110	23,601 0 0	353	1,654 0 0	1,463	25,255 0 0	213	195 0 0	1,250	25,060 0 0	
Total ...	55,560	53,488 0 0	72,997	19,221 0 0	128,557	72,709 0 0	94,958	26,359 0 0	33,599	46,350 0 0	
Tons Division.											
Deodar sleepers (broad gauge).	3,651	14,604 0 0	59	118 0 0	3,710	14,722 0 0	3,708	14,718 0 0	2	4 0 0	
Deodar (metre gauge) ...	1,045	2,090 0 0	†42,000	84,000 0 0	43,045	86,090 0 0	42,246	84,492 0 0	799	1,598 0 0	† Does not include 300 sleepers converted from broad-gauge sleepers.
Deodar beams ...	...	...	16	156 0 0	16	156 0 0	16	156 0 0	...	...	
Total ...	4,696	16,694 0 0	42,075	84,274 0 0	46,771	1,00,968 0 0	45,970	99,366 0 0	801	1,602 0 0	
1. Surveying and other instruments.	3	24 0 0	...	...	3	24 0 0	...	...	3	24 0 0	
2. Machinery ...											
3. Tools	5	40 0 0	4	17 0 0	9	57 0 0	3	24 0 0	6	33 0 0	
4. Office furniture ...	855	2,694 0 0	95	105 0 0	950	2,799 0 0	‡452	1,259 0 0	498	1,540 0 0	‡ 333 transferred to Jaunsar Division.
5. Tents	17	60 0 0	7	53 0 0	24	113 0 0	11	7 0 0	13	106 0 0	
6. Building, building materials, &c.	2	40 0 0	2	150 0 0	4	190 0 0	2	40 0 0	2	150 0 0	
7. Miscellaneous ...	14	4,710 0 0	2	390 0 0	16	5,100 0 0	...	...	16	5,100 0 0	
	35	82 0 0	15	34 0 0	50	116 0 0	14	33 0 0	36	83 0 0	
	931	7,650 0 0	125	749 0 0	1,056	8,399 0 0	482	1,363 0 0	574	7,036 0 0	
Total ...	5,627	24,344 0 0	42,200	85,023 0 0	47,827	1,09,367 0 0	46,452	1,00,729 0 0	1,375	8,638 0 0	

FORM No. 60.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Abstract showing the value of timber and of live and dead stock for the year 1880-81—(concluded.)

Description of timber and other stock.	On hand at commencement of the year.		Received during the year.		Total.		Sold, otherwise disposed of, and lost during the year, and allowance for depreciation.		On hand at close of the year.		Cause of loss and other particulars.
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	
Summary.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	
Timber of all kinds ...	28,005	37,281 0 0	45,228	86,805 0 0	73,233	1,24,086 0 0	62,579	1,05,969 0 0	10,654	18,117 0 0	
Fuel (cubic feet) ...	42,640	9,912 0 0	71,224	16,558 0 0	113,866	26,470 0 0	90,917	21,582 0 0	22,949	4,888 0 0	
Charcoal, cubic feet	...	...	927	230 0 0	927	230 0 0	927	230 0 0	...	...	
Charcoal, maunds ...	298	119 0 0	1,000	500 0 0	1,298	619 0 0	918	459 0 0	380	160 0 0	
Other dead stock. ...	4,269	56,985 0 0	1,043	6,551 0 0	5,312	63,536 0 0	710	1,687 0 0	4,602	61,849 0 0	
Elephants	3	6,800 0 0	...	...	3	6,800 0 0	...	...	3	6,800 0 0	
Total ...	75,215	1,11,097 0 0	1,19,424	1,10,644 0 0	194,639	2,21,741 0 0	156,051	1,29,927 0 0	38,588	91,814 0 0	

NOTE.—Difference in value at commencement and close of the year, Rs. 19,283 against the year.

APPENDICES.

APPENDIX A.

Annual rings counted by Bábu Shama Charn Chakarbatti in Hajáwa, 1880.

Average thickness of bark, 0·34 inches.

Spruce Fir.

Inches.	1	2	3	4	5	6	7	8	9
2 ...	20	23	26	26	18	22	24	19	28
4 ...	15	19	22	15	14	16	19	19	21
6 ...	11	19	26	10	12	17	12	22	12
8 ...	23	11	25	21	15	10	16	29	26
10 ...	30	25	30	22	29	16	25	22	29
12 ...	29	20	51	12	31	21	19	18	15
14 ...	58	39	24	47	84	28	37	26	29
16 ...	35	30	...	25	...	24	...	32	...
18 ...	...	...	...	38	...	...	...	...	...
20 ...	...	...	...	48	...	...	...	...	...
Total age ...	221	186	204	264	203	154	152	187	155
Average per inch ...	13·8	11·8	15·8	13·2	13·8	9·8	10·8	11·7	11·
Length of radius ...	16·	15·75	13 25	20·	14·75	15·75	14·	16·	14·

Silver Fir.

	1	2	3	4
2 ...	48	26	29	17
4 ...	17	15	14	16
6 ...	21	13	9	12
8 ...	28	15	13	19
10 ...	6	15	19	13
12 ...	8	24	14	19
14 ...	11	20	25	21
16 ...	7	13	9	14
18 ...	6	15	26	25
20 ...	...	10	33	41
Total age ...	152	175	184	197
Average per inch ...	8·8	9·	9 2	9·8
Length of radius ...	17·25	19·5	20·	20·

APPENDIX B.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE—TONS DIVISION.

Part of Kotigádh and Surárs Forests.—Statement of results of valuation surveys made during 1880-81.

Blocks and number of compartments.	Area in acres.	*Number of trees counted. Deodar (girth classes).* I. Over 6 feet.	II. Six feet and under to 3 feet.	Total compartments.	Total.	Remarks.
KOTIGÁDH.						
Morári Block.						
2 ...	140	172	97	269		
3 ...	135	368	197	565		
4 ...	220	568	251	819		
5 ...	200	132	37	169		
6 ...	235	4	2	6		
	930	1,244	584	1,828		
Ola Block.						
1 ...	Not known	131	63	194		
2 ...	Ditto	754	395	1,149		
3 ...	Ditto	564	321	885		
4 ...	Ditto.	330	277	607		
5 ...	Ditto.	1,385	795	2,180		
6 ...	Ditto.	638	357	995		
7 ...	Ditto.	599	584	1,183		
	Unknown	4,401	2,792	7,193	9,021	A large number of these trees are standing on precipitous ground and cannot be utilized.
SURÁRS.						
Kanda Block.						
1 ...	Not known	1,119	351	1,470		
2 ...	Ditto	1,422	795	2,217		
	Unknown	2,541	1,146	3,687		
Dumráli Block.						
1 ...	Not known	1,554	649	2,203		
2 ...	Ditto	1,557	1,067	2,624		
3 ...	Ditto	996	835	1,831		
4 ...	Ditto	61	75	136		
	Unknown	4,168	2,626	6,794	10,481	
Grand Total ...	930 and unknown.	12,354	7,148	...	19,502	

REPORT ON THE WORKING PLAN DIVISION FOR THE YEAR 1880-81.

CONTENTS.

	Para.
Officers in charge during the year	1
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Locality and commencement of field work	4
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Appendix No. I. { Abstract showing the result of the valuation survey of a portion of the Pátli Dún Forest.

Appendix No. II. { Summary statement of results of the enumeration survey of the Nindhaur Valley Hill Forests.

SCHOOL CIRCLE.

N. W. PROVINCES.

ANNUAL PROGRESS REPORT, WORKING PLAN DIVISION, 1880-81.

1. *Officers in charge, during the year.*—Mr. Dansey held charge of the division until the 28th February last, when he made over charge to Mr. Fernandez. Mr. Dansey was on privilege leave from 2nd November, 1880, to 1st January, 1881, during which time the work of the division ceased. Mr. Fernandez accompanied the Inspector-General of Forests on his tour in Kumaun and Garhwál from the 7th March to the end of the year, and the field-work was then left in charge of Mr. Lowrie, probationer.

Field work in the spring of 1880.

2. *Field-work in the spring of* 1880.—At the commencement of the year work was in progress in the Pátli Dún hill forests, the survey of which was completed on the 13th April. The results obtained are shown in Appendix No. I. The period from 14th April to 11th May was occupied in the selection and felling of 95 sál and sain trees, sections of 80 of which were brought to Dehra to enable the rings to be carefully counted during the recess months; Mr. Dansey, however, found it impossible to distinguish the rings of sál with certainty. On the 12th May the camp marched towards Dehra, arriving there on the 26th May.

Recess of 1880.

3. *Working plan of the Pátli Dún hill forests.*—Mr. Dansey reached Dehra about the 24th May. During the recess months he completed his working plan of the Patli Dún hill forests, from which the basin of the Mandál river has been excluded. The report has been printed, but as Mr. Dansey has since desired considérable changes to be made in it, and as his description of the compartments in the Mandál forests are to be added as an appendix, it has not yet been issued. The descriptions of the Mandál compartments were written and the data collected in the Naini Tál forests were arranged and classified during the recess.

Field season of 1880-81.

4. *Locality and commencement of field-work.*—Work in the field was not commenced until Mr. Dansey's return from leave on the 1st January, 1881. The work lay in the Nindhaur valley (Eastern Kumaun) from Chorgalia to the head of the valley. From the 1st to the 19th January were devoted to organizing the establishment, and the work of enumeration actually commenced below Aonla Khera on the 19th January.

5. *Survey plots.*—The surveyed area was, for the purposes of enumeration, divided into 17 survey plots. At first these plots (the boundaries of which followed natural features which were pointed out to the survey parties by the officer in charge or by assistants acting under his orders) were indicated on the maps, but they were not demarcated on the ground, except by a blaze made at the time of the enumeration on the outside of the outermost trees; but as a more effectual system of marking them was found to be necessary, the outermost trees were subsequently marked with white paint. This was found to be very expensive, and as white-wash answered the purpose, its use was adopted. The temporary demarcation of the plots on the ground was found to increase the amount of the field-work by nearly 20 per cent. As soon as the working plan is drawn up, permanent marks must be erected round the compartments.

6. *Classification of trees.*—The trees were divided into the following *diameter* classes —

I.—Diameter above 2′
II.—Diameter from 1½′ to 2′
III.—Diameter from 1′ to 1½′
IV.—Diameter from ½′ to 1′

Mr. Fernandez remarks that diameter classes have two advantages over girth classes, *viz.*, that the diameter is more easily estimated by the eye, and that it is more easily measured. Trees of the 1st and 2nd classes only were further classified as "sound" and "unsound." The soundness or otherwise of a tree cannot always be determined, and many trees which are unsound at the base may remain sound throughout the greater part of the workable stem. Trees were classed as unsound if they were noticeably decayed or hollow in the stem, if they had half-dead crowns, or were stag-headed, or if they gave back a hollow sound when struck with an axe by a man standing on the ground.

7. *Method of enumeration.*—The source of error in the system of enumeration described in paragraph 8 of the last report was that tickets were either accidentally lost or intentionally made away with, so as to lead to the belief that a large amount of work had been accomplished. The system was therefore abandoned, and the following method was adopted. Each enumeration party consisted of five men, *viz.*, one recorder and four gaugemen; the recorder was provided with a pencil and with a blank book ruled in six vertical columns to provide for the four girth classes (two of which were sub-divided for sound and unsound trees), and into three horizontal divisions for the three kinds of trees to be counted, *viz.*, sál, sain, and chír. The vertical columns were headed by the names of the colors on the beam of the gauge which correspond to the diameter classes. Each gaugeman was provided with an axe and a gauge, on the beam of which the limits of the diameter classes were indicated by colors. The gaugemen advanced in line and blazed each tree at a fixed height above the ground. After blazing a tree they measured its diameter *at the blaze*, and called out its specific name, the colors denoting its diameter class, and, in the case of the two highest classes, they also called out whether it was sound or otherwise. The recorder then made the necessary entry in his book, recording each group of ten trees separately by means of two vertical rows of four dots each, crossed diagonally by lines from corner to corner.

8. *Check surveys.*—For the purpose of checking the enumeration, the officer in charge of the work selected plots for re-survey by the same parties which originally surveyed them. It was not thought advisable to have the check survey made by fresh men, because it was thought that in case of discrepancies arising in the results, disputes would ensue between the two parties, and it would be impossible to say which was right. The officer or apprentice in charge of the check survey was present during the last half day's recording in each plot, and he added the record made by himself to that made before his arrival, so as to prevent the men from fudging as soon as the totals obtained from the check survey became known. The result of the check surveys went to prove that the original work was very good, but the check is not considered conclusive, and it will be necessary to devise some other means of ensuring the accuracy of the work. As the point at which each tree was originally measured was marked with a blaze, it could always, during the check survey, be re-measured at the place at which the first measurement was taken. Appendix No. II. gives a summary of the results of the enumeration survey.

9. *Description of compartments.*—Nothing had been done by Mr. Dansey, when he made over charge, towards writing the descriptions of compartments, and as Mr. Fernandez shortly afterwards accompanied the Inspector-General on his tour through Garhwál, this work remains to be done next season.

10. *Working plan.*—The Inspector-General of Forests visited the Nindhaur valley during the first week in March. He came to the conclusion that a very summary working plan, providing for a period of five years only, should now be drawn up for these forests, and he has sketched out the leading features of such a plan. He has divided the surveyed portion of the forest, excluding five plots (Nos 53, 79, 80, 81, and 84) into ten blocks. To these he has added an eleventh block, called Maswári, which consists of the forest situated on the face of the hills just above Chorgalia. His

recommendations will be found in his report on the forests of the Kumaun Division (1881), but the subjoined table shows the blocks with their areas, the total number of sál trees now standing in each block, and the year in which each block is to be worked. During the next five years work will only be undertaken in blocks IX., V., and VI., X., VII., XI. :—

Nindhaur Valley Hill Forests, Eastern Kumaun.

Blocks.		Number of plots composing each block.	Area in acres.	Total number of sál trees in each block.			Year of working.
Number.	Name.			Trees above 18″ diameter.	Poles from 6″ to 18″ diameter.	Total.	
IX.	Siláni	29—38 ...	1,811	9,395	24,761	34,156	1882
V.	Khoráni North	69—78 ...	1,511	6,434	22,166	28,600	1883
VI.	Bhalsani	91—96 ...	1,266	5,752	26,779	32,531	...
X.	Khonáni, South	39—45 ...	1,532	10,332	35,846	46,178	1884
VII.	Aonla Khera, North ...	82, 83, 85—90 ...	1,691	7,795	33,000	40,795	1885
XI.	Ditto, South	46—52 ...	1,485	7,853	22,414	30,267	1886
	Totals included in the working plan for the next five years.	...	9,296	47,561	164,966	212,527	...
I.	Sunkheri	1—5a ...	1,028	Not to	be worked	or valu	ed.
II.	Bilot, South	6—12 ...	1,067	3,907	33,627	37,534	...
III.	Ditto, North	13—28 ...	1,918	3,540	19,419	22,959	...
IV.	Rátá Ráu	97—101 ...	811	3,015	16,589	19 604	...
VIII.	Maswári	Not divided into plots.	3,200	Not to	be valued	or work	ed.
	Grand Total ...	...	17,320	58,023	234,601	292,624	...

N.B.—Plots Nos. 53, 79, 80, 81, and 82 are excluded from this statement.

The enumeration was made in four diameter classes, but as a considerable number of the 2nd class trees are mature, and as a large proportion of the 4th class poles are of the same age as those of the 3rd class, the trees of the four original diameter classes have, with Mr. Brandis' consent, now been thrown into two classes, *viz.*, trees and poles. Mr. Brandis has recommended that the survey should extend to all those sál-bearing portions of the Nindhaur valley which are not burdened with rights.

11. *Rate of progress of the enumeration survey.*—The enumeration survey was carried on from the 19th January to the 30th March, embracing a period of 71 days, from which must be deducted 18 Sundays, holidays, and rainy days, thus leaving 53 working days. As there were nine parties at work, this is equivalent to 477 days' work of one party; they were occupied as follows :—

Original survey	351
Check do.	48
Marking plot boundaries	76
Days lost on account of a man-eating tiger	2
Total days ...	477

As previously stated, the ground worked over measured 14,936 acres, of which 13,173 were surveyed.

The average outturn per survey party for this number of days was—

27·6 acres of ground surveyed.
904 trees enumerated.

The work done per gauge per day actually spent in enumeration was—

9·4 acres of ground surveyed.
307 trees enumerated.

This result must be considered very satisfactory.

The total expenditure was as follows :—

Head of expenditure.	Amount.	Remarks.
	Rs.	
AVI*b*. ...	96	Rs. 2,172 charged to the Kumaun Division and Rs. 5,244 charged to the Garhwál Division.
AVI*c*. ...	15	
AVIII*c*. ...	1 227	
BI*b*. ...	5,400	
BII*b*. ...	675	
BIII*c*. ...	3	
Total ...	7,416	

At present it is not possible to divide the charges for recess work accurately between the surveys of the Pátli Dún and Naini Tál. But the charges during the year for the field-work in the Nindhaur valley, exclusive of the divisional officer's pay, and exclusive of the pay of probationers and apprentices attached to the survey party, was Rs. 130. To this sum should be added Rs. 856 paid after the close of the year, and this brings the total expenditure up to Rs. 986. For the purpose of calculating what such work would cost in an ordinary year, Rs. 279, deposit money forfeited by establishment on account of misconduct, should be added, thus bringing the total expenditure up to Rs. 1,265, which comes to about Rs. 61 per square mile, as compared with Rs. 131 in the Pátli Dún and Rs. 116 in Naini Tál during 1879-80. The reduction in expenditure is principally due to the change of system of enumeration by which the establishment has been almost halved, and to the fact that in 1879-80 Mr. Dansey had to pay a European ranger. Work was also done at a more rapid pace last year than during the previous year. It should be remarked that in neither year is any expenditure on account of the pay of probationers or apprentices debited to the Working Plan Division. They are not always actually required for the valuation survey work, and they are paid from their own province or from the Direction Division. During the last season there were four probationers and apprentices attached to the survey party; they gave very valuable assistance and received instruction that will prove of great use to them; but had they not been available, it would only have been necessary to take on two additional recorders, which would have raised the cost of the work (exclusive of the Divisional officer's pay) to about Rs. 68 per square mile.

13. *Services of officers and establishment.*—Mr. A. F. Broun, Assistant Conservator, joined the School Circle from the French Forest School, and reached the Nindhaur valley on the 12th February.

The following probationers and apprentices were attached to the division :—

During the spring of 1880.

Karuna Nidhan Mukarji	Probationer.
Fazl-ud-din	Apprentices.
Jagmohan	Apprentices.

During the field season of 1880-81.

Mr. A. E. Lowrie	Probationers.
Bábu Sháma Charn Chakarbatti	Probationers.
Nanak Chand	Apprentices.
Naim-ud-din Ahmed	Apprentices.

Mr. Fernandez speaks very highly of the manner in which Mr. Lowrie conducted his duties while in temporary charge of the work during the time that he was absent with the Inspector-General of Forests. Mr. Fernandez also speaks very highly of Bábu Sháma Charn Chakarbatti and Nanak Chand. Naim-ud-din Ahmed only joined on the 2nd March and was then new to the work; but he was beginning to take to it at the close of the season.

FRED. BAILEY, MAJOR, R.E.,
Conservator of Forests, School Circle, N.-W. P.

The 29th July, 1881.

APPENDICES.

APPENDIX No. I.

Abstract showing the result of the valuation survey of a portion of the Pátli Dún Hill Forest surveyed during the year 1880-81.

Number of compartments.	Area in acres.	NUMBER OF TREES COUNTED.													Description of compartments.	Remarks.
		SÁL (DIAMETER CLASSES).						SAJN (DIAMETER CLASSES).						Total.		
		I. 2′ *and over.*		*II.* 1′6″ *to* 2′		*III.* 1′ *to* 1′6″	*IV.* 6″ *to* 1′	*I.* 2′ *and over.*		*II.* 1′6″ *to* 2′.		*III.* 1′ *to* 1′6″	*IV.* 6″ to 1′.			
		Sound.	Unsound.	Sound.	Unsound.			Sound.	Unsound.	Sound.	Unsound.					
70	310	562	320	1,639	347	5,433	6,664	104	26	296	45	615	609	16,660	Description of compartments written out roughly.	
71	209	476	236	1,347	210	4,195	4,480	70	16	193	22	395	444	12,084		
72	824	935	500	3,423	599	12,197	18,506	439	52	1,048	68	2,174	2,490	42,431		
73	478	1,180	724	2,849	649	7,500	9,727	120	54	414	66	946	995	25,134		
74	413	612	269	1,607	341	7,072	15,955	445	67	636	61	1,177	1,381	29,623		
	2,234	3,765	2,049	10,865	2,146	36,397	55,332	1,178	215	2,587	262	5,307	5,829	125,932		

APPENDIX

Summary statement of results of the Enumeration Survey of the

Serial number of plots.	Area in acres.	Number of days occupied in Enumeration Survey.	Number of Sál trees.								Number of			
			Class IV. Diameter 6″—1′.	Class III. Diameter 1′—1′ 6″.	Class II. Diameter 1′ 6″—2′.		Class I. Diameter above 2′.		Total of all classes per plot.	Total of all classes per acre.	Class IV. Diameter 6″—1′.	Class III. Diameter 1′—1′ 6″.	Class II. Diameter 1′6″—2′	
					Sound.	Unsound.	Sound.	Unsound.					Sound.	Unsound.
1	75	...	...	...	...	...	...	...	...	...	...	...	...	...
1a	151	...	...	...	...	...	...	...	...	...	...	...	...	...
2	100	...	...	...	...	...	...	...	...	...	...	...	...	...
2a	119	...	...	...	...	...	...	...	...	...	...	...	...	...
3	14[illegible]	...	...	...	...	...	...	...	...	...	...	...	...	...
3a	101	...	...	...	...	...	...	...	...	...	...	...	...	...
4	86	...	...	...	...	...	...	...	...	...	...	...	...	...
4a	94	...	...	...	...	...	...	...	...	...	...	...	...	...
5	125	...	...	...	...	...	...	...	...	...	...	...	...	...
5a	33	...	...	...	...	...	...	...	...	...	...	...	...	...
6	144	4	1,417	1,168	323	66	130	83	3,187	22·1	244	313	177	38
7	136	5	2,819	2,271	555	42	240	29	5,956	43·7	417	566	277	12
8	164	5	3,599	2,809	623	73	198	60	7,462	45·5	551	558	186	68
9	120	4	2,417	1,928	400	77	129	80	5,031	41·9	227	134	40	11
10	172	4	2,884	1,316	278	29	76	15	4,598	26·7	850	457	161	49
11	161	4	8,163	2,736	287	39	57	18	11,300	70·6	977	648	171	51
12	170	...	...	...	...	...	...	...	...	...	...	...	...	...
13	46	...	...	...	...	...	...	...	...	...	...	...	...	...
13a	52	...	...	...	...	...	...	...	...	...	...	...	...	...
14	102	...	...	...	...	...	...	...	...	...	...	...	...	...
14a	43	...	...	...	...	...	...	...	...	...	...	...	...	...
15	161	...	...	...	...	...	...	...	...	...	...	...	...	...
16	197	7	4,244	1,805	284	30	47	7	6,417	32·6	1,465	831	277	24
17	161	...	...	...	...	...	...	...	...	...	...	...	...	...
18	160	4	915	522	167	14	87	17	1,722	10·7	685	532	252	15
19	78	5	1,451	1,133	343	57	90	24	3,098	39·7	470	410	174	16
20	108	2	415	396	123	17	51	18	1,020	9·4	274	374	172	29
21	118	4	1,167	426	225	24	89	28	1,959	16·5	521	279	232	16
22	99	3	1,072	446	117	20	50	15	1,720	17·4	599	242	147	15
23	74	3	173	168	82	6	39	6	474	6·4	149	122	80	8
24	126	3	546	335	170	10	264	13	1,338	10·6	335	268	150	14
25	74	2	147	90	54	1	15	2	309	4·1	88	104	95	3
26	87	3	668	400	165	9	57	8	1,307	15·0	261	298	169	5
27	130	4	1,296	806	295	4	57	12	2,470	18·9	781	726	282	9
28	102	3	455	343	141	11	72	3	1,025	10·0	145	189	141	19
29	223	3	982	892	555	142	246	127	2,944	13·2	342	382	185	39
30	192	4	1,143	912	436	139	137	70	2,837	14·7	308	251	143	26
31	104	3	913	615	203	66	70	29	1,896	18·[illegible]	359	224	96	36
32	244	5	2,088	1,658	778	118	313	115	5,070	20·7	652	490	264	43
33	147	3	1,376	1,277	550	104	242	110	3,659	25·0	417	442	211	51
34	128	4	586	565	271	94	119	63	1,698	13·3	309	252	167	21
35	139	4	982	1,180	751	129	310	123	3,475	24·9	327	225	167	15
36	226	6	2,272	2,061	629	185	221	94	5,462	24·4	1,059	1,135	606	88
37	234	5	1,608	1,545	547	48	215	41	4,004	17·1	773	641	406	23
38	175	5	1,292	814	458	143	258	147	3,110	17·7	371	277	124	33
39	197	8	1,786	1,584	767	125	239	69	4,570	23·1	8[illegible]7	507	233	17
40	259	10	2,686	2,091	682	88	214	59	5,820	22·4	1,5[illegible]4	1,045	342	24
41	242	12	2,927	3,015	1,439	442	453	310	8,586	35·4	1,2[illegible]9	718	376	41

No. II.

Nindhaur Valley Hill Forests, Kumaun, North-Western Provinces.

Sain trees.				Number of Chir trees.								Total number of trees of all species and classes.		Number of Sál per acre		Remarks.
Class I. Diameter above 2'.		Total of all classes per plot.	Total of all classes per acre.	Class IV. Diameter 6"—1'.	Class III. Diameter 1'—1' 6".	*Class II. Diameter 1' 6"—2'*		*Class I. Diameter above 2'*		Total of all classes per plot.	Total of all classes per acre.	Per plot.	Per acre.	Trees, diameter above 1' 6".	Poles, diameter from 6" to 1' 6".	
Sound.	Unsound.					Sound.	Unsound.	Sound.	Unsound.							
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Not valued by reason of the precipitous nature of the ground and the absence of any valuable stock.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
92	31	895	6·2	1	...	3	...	3	...	7	...	4,089	28·3	4·1	17·9	
130	12	1,414	10·4	20	13	14	...	11	...	58	0·4	7,428	54·6	6·3	37·4	
118	55	1,536	9·4	2	12	9	...	1	...	24	0·1	9,022	55·0	5·8	39·6	
14	5	431	3·6	...	...	1	...	...	...	1	0·0	5,463	45·5	5·7	36·2	
72	38	1,627	9·5	...	...	...	...	...	...	...	...	6,225	36·2	2·3	24·4	
85	43	1,975	12·2	...	...	2	...	1	...	3	0·0	13,278	82·6	2·5	68·1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Not valued by reason of the precipitous nature of the ground and the absence of any valuable stock.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
178	24	2,799	14·1	126	157	117	...	204	...	604	3·5	9,820	49·7	1·8	30·6	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Not valued, the ground being precipitous and the stock of little value.
155	15	1,654	10·3	53	35	23	...	9	...	120	0·7	3,496	21·8	1·7	8·9	
95	13	1,178	15·1	62	29	33	...	32	...	156	2·0	4,432	56·8	6·5	33·1	
77	17	943	8·7	45	15	4	...	...	...	64	0·5	2,027	18·7	1·9	7·5	
188	16	1,252	10·5	28	7	3	...	2	...	40	0·3	3,251	27·4	3·0	13·4	
132	8	1,143	11·5	5	14	2	...	...	...	21	0·2	2,884	29·1	2·0	15·3	
59	6	424	5·7	22	46	34	...	21	...	123	1·6	1,021	13·7	1·7	4·6	
107	9	883	7·0	4	8	...	...	...	...	12	0·1	2,233	17·7	3·6	6·9	
85	5	380	5·1	10	19	18	...	14	...	61	0·8	750	10·1	1·0	3·2	
125	5	863	9·9	1	6	...	...	...	...	7	0·1	2,177	25·0	2·7	12·2	
178	9	1,985	15·2	...	...	...	...	1	...	1	0·0	4,456	31·8	2·8	16·1	
90	9	593	5·8	24	22	13	...	23	...	82	0·8	1,700	16·6	2·2	7·8	
120	30	1,098	4·9	11	12	10	...	6	...	39	0·2	4,081	18·3	4·8	8·4	
112	11	851	4·4	30	38	30	...	12	...	110	0·5	3,798	19·7	4·1	10·6	
47	14	776	4·7	39	43	41	...	27	...	151	1·4	2,823	27·2	3·6	14·7	
219	39	1,707	6·9	84	109	50	...	10	...	253	1·0	7,030	28·8	5·4	15·3	
165	41	1,327	9·0	12	11	6	...	1	...	30	0·2	5,016	34·0	6·9	18·1	
111	19	879	6·9	65	85	45	...	16	...	211	1·6	2,788	21·8	4·3	9·0	
98	21	853	6·1	12	11	9	...	9	...	41	0·3	4,369	31·3	9·4	15·5	
376	12	3,306	14·8	76	123	56	...	22	...	277	1·2	9,045	40·4	5·1	19·3	
268	11	2,122	9·9	154	182	102	...	66	...	504	2·1	6,630	20·3	3·6	13·5	
93	27	925	5·2	350	164	106	...	23	...	643	3·6	4,678	26·5	5·7	12·0	
145	14	1,783	9·0	188	193	56	...	7	...	444	2·2	6,797	34·5	6·0	17·1	
184	10	3,119	12·8	71	107	58	...	18	...	254	0·9	9,273	35·8	4·0	18·4	
252	33	2,688	11·1	1	...	1	...	2	...	4	0·0	11,278	46·6	10·9	24·5	

APPENDIX

Summary statement of results of the Enumeration Survey of the

Serial number of plots.	Area in acres.	Number of days occupied in Enumeration Survey.	Number of Sál trees.								Number of			
			Class IV. Diameter 6″—1′.	Class III. Diameter 1′—1′ 6″.	Class II. Diameter 1′—1′ 6″.		Class I. Diameter above 2′.		Total of all classes per plot.	Total of all classes per acre.	Class IV. Diameter 6″—1′.	Class III. Diameter 1′—1′ 6″.	Class II. Diameter 1′—6″ 2′.	
					Sound.	Unsound.	Sound.	Unsound.					Sound.	Unsound.
42	156	13	1,011	1,317	503	103	248	69	3,251	20·8	328	314	183	21
43	196	8	3,310	2,985	891	101	293	105	7,685	39·2	691	592	170	10
44	204	7	1,669	1,451	860	192	490	236	4,898	24·0	271	227	137	33
45	278	6	5,453	4,561	1,510	179	533	132	12,368	44·4	679	573	251	[illegible]
46	262	6	2,305	1,729	684	150	315	79	5,262	20·0	445	469	183	48
47	147	3	551	739	580	57	371	88	2,386	16·2	70	143	108	5
48	215	6	1,249	1,368	762	93	406	113	3,991	18·5	316	312	153	14
49	165	5	1,437	831	237	78	65	34	2,682	16·2	720	592	236	31
50	267	4	1,244	857	338	88	254	90	2,871	10·7	318	349	161	25
51	235	5	2,656	2,549	780	104	278	93	6,460	27·4	691	778	292	47
52	194	4	2,567	2,332	897	190	328	117	6,431	33·1	515	427	207	41
53	164	4	1,336	856	341	105	90	43	2,771	16·9	439	411	169	38
69	124	4	1,429	960	335	38	134	24	2,920	23·6	744	451	195	32
70	137	4	1,075	655	304	50	171	42	2,297	16·7	359	373	229	22
71	125	6	2,472	1,481	488	53	217	51	4,762	38·0	986	722	323	31
72	218	2	566	620	246	22	91	19	1,564	7·1	346	242	100	23
73	183	3	1,091	981	489	91	221	83	2,956	16·1	589	459	256	38
74	174	4	991	877	386	57	166	56	2,533	14·5	609	431	173	26
75	112	3	464	385	187	9	93	11	1,149	10·2	345	247	13[illegible]	7
76—77	195	5	2,207	1,568	637	134	248	93	4,887	25·1	480	267	295	28
78	243	6	2,434	1,910	777	62	309	45	5,537	22·8	1,162	769	322	42
79	113	3	912	850	502	45	372	107	2,788	24·6	52	85	76	4
80	243	5	1,433	1,177	617	95	421	307	4,050	16·6	541	427	267	30
81	86	4	853	755	282	36	119	18	2,063	13·9	389	397	178	13
82	240	7	2,216	1,281	447	167	164	86	4,361	18·1	1,069	864	427	52
83	295	8	4,429	3,859	1,439	163	456	115	10,461	35·5	672	886	393	138
84	200	5	2,151	2,411	8,061	73	260	35	5,791	29·0	586	902	493	37
85	207	3	1,226	969	549	75	278	111	3,208	15·5	167	204	124	9
86	245	4	2,714	1,697	670	84	315	80	5,560	22·7	1,039	843	359	41
87	161	4	2,477	1,636	532	67	254	67	5,033	31·2	807	550	261	47
88	202	4	3,004	1,429	400	60	190	56	5,139	25·4	718	520	199	18
89	196	4	1,482	987	319	39	169	29	2,925	14·9	621	570	286	38
90	145	3	2,362	1,323	345	65	113	22	4,220	29·0	355	342	126	29
91	125	3	834	408	150	71	113	38	1,559	12·4	300	417	222	26
92	118	3	1,887	1,028	214	39	68	16	3,252	27·6	224	238	114	24
93	298	6	3,494	2,384	874	168	348	89	7,357	24·9	1,013	1,060	597	98
94	186	5	1,337	980	539	75	256	51	3,238	17·4	500	414	266	21
95	301	5	3,905	3,280	959	144	290	119	8,697	28·9	495	467	209	103
96	238	7	4,232	3,010	576	75	168	46	8,107	34·0	942	818	261	35
97	222	4	4,442	2,577	621	28	169	17	7,854	35·[illegible]	907	634	188	26
98	114	3	1,726	1,101	336	23	137	9	3,372	29·5	548	367	156	25
99	171	4	1,044	863	408	21	150	40	2,526	14·7	292	314	271	23
100	129	4	1,333	797	201	20	122	22	2,496	19·3	311	295	172	30
101	175	4	1,697	1,009	397	53	158	42	3,356	19·1	321	224	93	23
Total ...	14,936	351	143,196	1,04,130	37,209	5,934	15,194	4,935	3,10,598	23·6	41,6[illegible]	34,928	16,519	2,359

No. II.

Nindhaur Valley Hill Forests, Kumaun, North-Western Provinces—(concluded.)

SAIN TREES.				NUMBER OF CHIR TREES.								TOTAL NUMBER OF TREES OF ALL SPECIES AND CLASSES.		NUMBER OF SAL PER ACRE.		Remarks.
Class I. Diameter above 2′.						*Class II. Diameter 1′ 6″—2′.*		*Class I. Diameter above 2′.*								
Sound.	Unsound.	Total of all classes per plot.	Total of all classes per acre.	Class IV. Diameter 6″—1′.	Class III. Diameter 1′—1′ 6″.	Sound.	Unsound.	Sound.	Unsound.	Total of all classes per plot.	Total of all classes per acre.	Per plot.	Per acre.	Trees, diameter above 1′ 6″.	Poles, diameter from 6″ to 1′ 6″.	
104	12	962	6·2	66	107	54	...	25	...	252	1·6	4,465	28·6	5·9	14·9	
61	12	1,536	7·8	127	124	73	...	54	...	378	1·9	9,599	48·9	7·0	32·2	
99	32	799	3·9	120	130	101	...	28	...	379	1·8	6,076	29·7	8·7	15·3	
122	44	1,717	6·1	78	93	66	...	31	...	268	1·0	14,358	51·6	8·4	36·0	
96	33	1,274	4·8	106	116	92	...	47	...	361	1·3	6,897	26·3	4·0	15·4	
83	12	421	2·8	52	39	49	...	20	...	160	1·1	2,967	20·1	7·4	8·8	
132	18	945	4·3	21	28	46	...	27	...	122	0·5	5,058	23·5	6·3	12·2	
83	12	1,674	10·1	101	104	60	...	21	...	286	1·7	4,642	18·2	2·5	13·7	
109	24	986	3·6	339	288	218	1	160	1	1,007	3·7	4,864	28·1	2·9	7·8	
153	20	1,981	8·4	13	26	11	...	16	...	66	0·3	8,507	36·2	5·3	22·1	
117	30	1,337	6·8	75	90	51	...	30	...	246	1·3	8,014	41·3	7·8	25·3	
112	26	1,195	7·2	30	34	18	...	9	...	91	0·6	4,057	24·7	3·5	13·4	
93	14	1,529	12·3	...	...	...	...	1	...	1	0·0	4,450	36·0	4·3	19·3	
114	10	1,107	8·0	25	40	12	...	2	...	79	0·6	3,483	25·3	4·1	12·6	
143	14	2,219	17·7	125	139	52	...	9	1	326	2·6	7,307	58·3	6·5	31·5	
60	15	786	3·6	14	13	13	...	...	...	40	0·2	2,390	10·9	1·7	5·4	
149	30	1,521	8·3	27	39	28	...	11	...	105	0·6	4,582	25·0	4·8	11·3	
81	23	1,343	7·7	63	63	21	...	6	...	153	0·9	4,029	23·1	3·8	10·7	
72	9	815	7·2	26	20	3	...	...	...	49	0·4	2,013	18·0	2·6	7·6	
159	21	1,550	7·9	...	3	9	...	1	...	13	0·1	6,450	32·9	5·7	19·4	
90	25	2,510	10·3	37	63	16	...	...	...	116	0·5	8,163	33·6	4·9	17·9	
101	16	334	2·9	...	...	...	...	...	...	...	...	3,122	27·6	9·1	15·5	
201	31	1,497	6·1	2	5	...	...	...	...	7	0·0	5,554	22·8	5·9	10·7	
107	7	1,091	12·6	1	4	2	...	...	...	7	0·1	3,161	36·7	5·3	18·6	
264	54	2,736	11·3	14	31	49	...	24	...	118	0·5	7,209	29·9	3·6	14·5	
238	142	2,469	8·4	15	14	26	...	45	...	100	0·3	1,330	44·2	7·4	28·1	
420	48	2,486	12·4	5	12	7	...	3	...	27	0·2	8,304	41·5	6·2	22·8	
121	12	637	1·0	11	23	15	...	8	...	57	0·2	3,902	18·8	4·9	10·6	
182	24	2,488	3·0	14	29	53	...	10	...	106	0·4	8,154	33·3	4·7	18·0	
120	45	1,830	11·3	2	4	6	...	10	...	22	0·1	6,885	42·7	5·7	25·5	
167	17	1,641	8·1	3	7	8	...	3	...	21	0·1	6,801	30·6	3·5	21·9	
220	31	1,765	9·0	13	34	33	...	17	...	97	0·5	4,787	24·4	2·8	12·1	
95	34	981	6·7	20	41	36	...	22	...	119	0·8	5,320	36·6	3·7	25·3	
122	19	1,106	8·8	...	...	...	...	...	...	...	...	2,665	21·3	2·5	9·9	
73	24	697	5·9	1	1	1	...	2	...	5	...	3,954	33·6	2·9	24·7	
380	66	3,214	10·7	31	54	27	...	7	...	119	0·4	10,690	35·8	4·9	20·0	
211	18	1,430	7·1	12	11	12	...	...	...	35	0·2	4,703	25·3	5·0	12·4	
132	100	1,506	5·0	85	97	84	...	102	...	368	1·2	10,571	35·1	5·0	23·9	
158	19	2,233	9·4	57	119	99	...	82	...	357	1·5	10,697	44·9	3·6	30·4	
90	23	1,868	8·4	70	140	151	...	293	...	654	2·9	10,376	46·7	3·7	31·6	
109	23	1,128	10·7	61	49	44	...	69	...	223	1·9	4,623	40·9	4·8	24·7	
203	28	1,131	6·6	32	17	26	...	35	...	110	0·6	3,767	22·0	3·6	11·1	
93	12	913	7·0	253	217	226	...	320	...	1,016	7·8	4,425	34·3	2·8	16·5	
38	17	716	4·1	85	114	149	...	203	...	551	3·1	4,623	26·4	3·7	15·4	
10,347	1,818	1,07,687	8·2	3,728	4,044	2,893	1	2,294	2	12,962	1·0	431,247	32·8	4·8	18·8	Area surveyed, 13,173 acres; area left out, 1,763 acres.

ORDERS OF GOVERNMENT.

No. 819 of 1881.

RESOLUTION.

REVENUE (FORESTS) DEPARTMENT.

Dated Camp Lucknow, the 14th November, 1881.

ANNUAL FOREST ADMINISTRATION REPORT FOR THE YEAR ENDING 31ST MARCH, 1881.

Area and boundaries.

THE areas under the control of the Forest Department at the commencement and at the close of the year appear to have been respectively as follows:—

Circles.	Area in square miles.						
	On 1st April, 1880.			*On 31st March,* 1881.			Increase or decrease.
	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.	
Central	1,467	100	1,567	1,467	100	1,567	*Nil.*
Oudh	1,079	...	1,079	1,079	...	1,079	*Nil.*
School	732	...	732	767	...	767	35
Total ...	3,278	100	3,378	3,313	100	3,413	35

In addition to these, the Conservator of the Central Circle had charge of certain forests leased from the Rája of Tehri-Garhwál, and the Conservator of the School Circle of the Basahir forest; but the areas of these are not yet known.

The return attached to the report of the Conservator, Central Circle, is misleading. It does not reproduce, as it should, in columns 3 and 4 (area on the 1st April, 1880), the entries in columns 9 and 10 of the return for the preceding year (total on 31st March, 1880); and it shows an actual increase of area amounting to 32 square miles or 20,882 acres; whereas, as a matter of fact, there was no increase in the area of the Circle, but a mere transfer from the Garhwál to the Ganges division of part of the forests which, having been for some time in charge of the Superintendent of the Roorkee Workshops, were withdrawn from his control.

In the Oudh Circle there was practically no alteration in the total area. Some small exchanges were made, almost acre for acre, to secure more compact boundaries, or land more suitable for forest purposes than what was relinquished. Some additions to the forest area in Gonda and Gorakhpur were contemplated, but the necessary preliminaries were not completed during the year under review.

The net increase of 35 square miles is due to the following *bonâ fide* additions to area:—

	Acres.
The Pattri forest in Saháranpur, transferred from charge of Superintendent, Roorkee Workshops	13,896
Extensions in Tehri-Garhwál	5,324
Total ...	19,220

and to a net increase of 3,619 acres, resulting from the ascertainment, by the Forest Survey Department, of the correct areas of the forests in the Dehra Dún district, and of the Surárs block in Tehri-Garhwál.

As regards boundaries, the Conservator, Central Circle, reports that considerable progress was made in their demarcation during the year. The Lieutenant-Governor trusts that their completion may soon be effected, and commends the subject to the constant attention of the Conservator. A recent report shows that satisfactory progress has been made by the Assistant Conservator and an official deputed by the Rája, in the arrangements for the demarcation of the boundaries of the forests leased from the Rája of Tehri, and the preparation of the record-of-rights therein.

In the Oudh Circle the re-demarcation of the boundaries in Bahraich was completed, and the boundaries generally were kept up and repaired. The Conservator thinks it will be advisable—when certain negociations with the Collector of Gorakhpur, for the inclusion within forest areas of certain grass lands, have been concluded—to have all the forest boundaries of that division demarcated by a special officer. He should state whether the boundaries of all other forests in his Circle have now been permanently laid down and properly demarcated.

The boundary lines and marks in the School Circle are reported to be, as a rule, in good order.

Protection and improvement.

2. The area covered by plantations was:—

	On 1st April, 1880.	On 31st March, 1881.	+ or —
	Acres.	Acres.	
Central Circle	695	695	...
Oudh "	445	563	+118
School "	1,122	1,230	+108
Total	2,262	2,488	+226

And the amount expended was—

	1879-80.	1880-81.
	Rs.	Rs.
Central Circle	16,217	18,323
Oudh "	6,085	7,317
School "	17,369	18,298
Total	39,671	43,938

More was done in the way of sowing and planting than in previous years, and more in the Central and School Circles than in the Oudh Circle; but His Honor would be glad to see these operations far more extensively carried on than they are by any of the Conservators. In the Ránikhet nursery, Mr. Craw continued to do excellent work in raising and distributing forest and fruit trees; besides supplying large numbers of young forest trees to the cantonment authorities at Ránikhet, and to be planted in the Naini Tal forests, he distributed 2,492 forest, and 4,197 fruit trees, amongst householders and villagers. There was a stock of nearly 300,000 young trees in the nursery. Some progress was made in the establishment of gardens at Dehra Dún and Chakráta.

Considerable success was achieved in Gorákhpur in plantations of indigenous trees, especially *sissu*. The system of transplanting the seedlings into cylindrical tiles, so as to allow the roots to strike to the depth of three feet, seems an excellent one. Mr. Campbell, who is in charge of the division, is making the tiles for this purpose, as well as for a system of sub-soil watering, which is being tried with success, with a machine lent by his father, Mr. Angus Campbell of Roorkee. For the interest he has taken in these matters, as well as for the satisfactory way in which he has conducted his duties generally as a divisional officer, and for the assistance he has given towards improving the arboriculture of the district, Mr. Campbell is entitled to credit.

Experiments were made in Saháranpur in order to test the productive power of bamboos under different degrees of thinning. The results should be reported in due course.

Creeper-cutting was apparently carried on only in the Kumaun, Kheri, and Saháranpur divisions.

3. The area in which protection from fire was attempted, that in which it failed, that successfully protected, and the total cost of protection up to the 30th June, 1881, were as follows :—

	Area attempted to be protected.	Failure.	Actually protected.	Cost.
	Acres.	Acres.	Acres.	Rs.
Central Circle	215,558	11,345	204,213	60,836
Oudh "	178,619	4,865	173,754	30,546
School "	113,639	988	112,651	25,569
Total, 1880-81 ...	507,816	17,198	490,618	116,951
Total, 1879-80 ...	429,413	6,244	423,169	90,014

The results are as a whole not unsatisfactory, for, though the attempt at protection failed in a larger area than in the preceding year, the operations were more extensive, and the area in which success was attained was 67,000 acres larger.

Two-thirds of the area burnt was in the Central Circle, and nearly the whole of this (10,846 acres out of 11,345 acres) was in the Garhwál division; of this, again, 9,492 acres belonged to the Rehar forest, which is described as very dry, and of which the protection was attempted for the first time in 1881. The fires are believed by the departmental officers to have been caused intentionally by native *shikáris*, but the police were unable to discover the guilty parties. It is to be hoped that Mr. O. Greig, who is in charge of the division, will be more successful in future; but for the failure in this forest the provincial results would have been remarkably good.

4. Enumeration surveys, with the object of collecting data for the preparation of working plans, were carried on by the Working Plan Division in the Pátli Dún and Nindhaur valley. The division was in charge, during the greater part of the year, of Mr. Dansey, who was replaced, at the end of February, by Mr. Fernandez. The Working Plan Division, though employed in the Central Circle, is under the control of Major Bailey, who is thus able to utilize it for the instruction of students attend-

ing the Forest School. Major Bailey attaches to his report a separate chapter on the operations of this division, which, if well established and carefully supervised, should contribute work of the greatest value to forest administration, not only in these provinces but beyond them. Mr. Dansey completed during the year his proposed working-plan of the Pátli Dún forests, but subsequently found cause to make considerable changes in it. The Inspector-General of Forests visited the Nindhaur valley in March, looked into the work, and made suggestions for a summary working-plan for five years, which are being given effect to.

Captain Wood makes some interesting remarks on the measures which he has taken for ascertaining the rate of growth of *sál* trees: he appears to be entitled to the credit (which in para. 16 he claims) of having been the first to point out that in *sál* timber more than one ring is developed in a year.

The Conservator of the School Circle adopts the very useful method of drawing up, in communication with the divisional officer, an annual plan of operations for each division, and giving this to the divisional officer for his general guidance. As he explains, these plans are liable to modification from time to time as experience suggests; but they indicate generally what the Conservator expects the divisional officer more particularly to attend to, and, unless he can show good cause to the contrary, to carry out. The Lieutenant-Governor expressed a wish that the system should be followed by the other two Conservators, and he would have been glad to find some reference to the subject in their reports. The matter will, however, not be lost sight of, for, under the rules for bringing the forest and revenue officers into closer communication with each other, which were introduced into the Oudh Circle during 1880-81, and which have recently been extended to the Central and part of the School Circle, these annual plans of operations are prescribed for submission by forest divisional officers through the Collector to the Conservator, who is required to forward to Government through the Revenue Commissioner a sketch of the proposed operations in each revenue division.

5. The results of prosecutions for breach of forest rules in the year under review and in the preceding year are shown in the following table:—

		Prosecutions.		Convictions.	
		Number of cases.	Number of persons.	Number of cases.	Number of persons.
Central Circle	1879-80	278	580	232	465
	1880-81	388	828	336	663
Oudh "	1879-80	92	184	70	137
	1880-81	36	59	30	53
School "	1879-80	55	129	50	102
	1880-81	43	121	39	109
Total	1879-80	425	893	352	704
	1880-81	467	1,008	405	824

By far the larger number of prosecutions were instituted in the Central Circle; looking to the number of convictions obtained, action would seem to have been justified; but, considering that the forest officer is in most cases the judge, His Honor thinks that it will be well if the Conservator will in future satisfy himself, where the number of cases is exceptionally large, that the law is not being enforced with undue severity. The prosecutions for causing injury by fire, or for grazing without authority, were few; the great mass were for unauthorised felling and appropriation of wood or produce, and for what are classed as "other offences." Some explanation of these "other offences" should be furnished in the body of the reports.

Construction of communications and buildings.

6. The sums expended on the construction of roads, bridges, buildings, wells, &c., were as follows, compared with the sums spent in the preceding year:—

		Roads and bridges.	Buildings.	Other works.	Total.
		Rs.	Rs.	Rs.	Rs.
Central Circle,	1879-80	20,496	3,348	1,040	24,884
	1880-81	20,480	6,971	28	27,479
Oudh "	1879-80	13,854	16,583	2,171	32,608
	1880-81	11,966	18,688	3,274	33,928
School "	1879-80	7,081	27,572	16	34,669
	1880-81	7,254	3,029	35	10,318
Total ...	1879-80 ...	41,431	47,503	3,227	92,161
	1880-81 ...	39,700	28,688	3,337	71,725

Much good work was done, especially in the Oudh Circle. In the Central Circle, also, great efforts were made to repair the extensive injuries done to roads, bridges, &c., by the extraordinarily heavy rain which fell in 1880.

Yield and working.

7. The number of trees felled and disposed of, with their contents in cubic feet, during the year under review and the preceding year, are compared in the following table:—

		In hand.		*Felled.*		*Total.*		*Disposed of.*		*Closing balance.*	
		Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
Central Circle.	1879-80,	1,863	45,788	58,855	250,876	60,718	296,664	57,050	244,974	3,668	51,690
	1880-81,	3,668	51,690	28,283	427,729	31,951	479,419	31,698	467,003	253	12,416
Oudh Circle.	1879-80,	7,443	340,068	59,016	163,534	66,459	503,602	66,159	497,602	300	6,000
	1880-81,	300	6,000	87,388	92,760	87,688	98,760	87,679	98,661	9	99
School Circle.	1879-80,	13,982	112,177	18,204	394,206	32,186	506,383	28,212	394,400	3,974	111,983
	1880-81,	3,974	111,983	2,114	117,490	6,088	229,473	5,515	176,449	573	53,024
Total ...	1879-80,	23,288	498,033	136,075	808,616	159,363	1,306,649	151,421	1,136,976	7,942	169,673
	1880-81,	7,942	169,673	117,785	637,979	125,727	807,652	124,892	742,113	835	65,539

In last year's review the Lieutenant-Governor pointed out that the instructions given on the reports for 1878-79, to the effect that the total yield of each Circle should be compared with that of former years, and

considerable differences explained, had been overlooked, and Conservators were desired to regard them in future. In the reports now under consideration, the Conservator of the School Circle alone deals satisfactorily with the subject. Mr. Greig does not even compare the results of the two years: Captain Wood gives comparative tables, but leaves the cause of the great decrease in the amount of timber felled and disposed of to be searched for in other parts of his report.

The suggestion made by the Government of India in para. 8 of the orders, No. 40F., dated 15th January, 1881, that in the returns appended to the report the number of trees cut in selection fellings, in clearances on lines, roads or elsewhere, thinnings, improvement cuttings, &c., might with advantage be shown separately, has been lost sight of. The Conservator of the School Circle gives these details in the body of his report: he and the Conservator of the Oudh Circle both show, at the foot of form No. 53, the number of trees of each kind and of each class according to girth which were felled; the Conservator of the Central Circle merely gives details of the numbers of mature trees and poles.

In the Central Circle though fewer trees were felled, they contained more timber, and the amount of timber disposed of was nearly double that disposed of in 1879-80. Of 28,283 trees felled, 17,158 were merely poles; the remaining 11,125 mature trees included 3,015 *sál*, 1,271 *chír*, 1,901 *deodar* (all dead trees), and 2,438 *sein*. The increase in timber disposed of seems to have been due to a large demand for *deodar* sleepers and for miscellaneous wood for the Ganges Canal head-works.

The Conservator of the Oudh Circle merely remarks that the amount of timber felled during the year was very small, without giving any reason for this. The principal cause was, however, that the fellings of mature *sál* were, under the instructions of the Government of India, restricted, on the completion of a contract with the Patna Opium Agency, to narrower limits than in previous years. Most of the so-called "trees" felled were saplings removed in clearing lines in the Gorakhpur forests.

The returns of the School Circle likewise show a great diminution in the fellings. This is partly nominal, owing to a mistake in the returns of the previous year; for the rest, it is explained that only so much timber was felled as was needed to supplement stock in hand for the purpose of meeting immediate demands.

8. The statements intended to show the extent of the work done in respect of the cutting, preparation and disposal of logs, sleepers, and other scantlings, have been prepared so differently by the various Conservators, that it has only been possible, with infinite trouble, to compare the work of the various Circles, and to show provincial results. The Oudh return is specially perplexing, with the vagueness and incompleteness of its descriptions of the timber and scantlings; and no two Conservators show the quantity of firewood according to the same measure, or enter the details in the same columns. It is to be hoped that the information will be supplied in a more uniform and intelligible shape in the next returns, which

are to be in the forms prescribed in the 2nd edition of the Forest Department Code.

9. As regards firewood, it would seem, from form No. 54, that in the Central Circle there was, at the beginning of the year, a stock of 24,668 maunds in the forest; during the year 167,408 maunds more were collected; 125,966 maunds were sent to depôt (exclusive of 2,566 maunds in Jhánsi, entered in forms Nos. 55 and 56, but, for some unexplained reason, omitted in No. 54); 195 maunds were lost by floods; and 5,915 maunds remained in the forests.

In the Oudh Circle there was apparently no balance of firewood from the preceding year (statement No. 56, however, shows 12,633 maunds); 5,789 maunds were collected; of this, 3,074 maunds were sold on the spot to purchasers, 2,549 maunds were sent to a depôt in Lucknow, and there was a closing balance of 166 maunds. There is a reference in the return to "stacks," but whether these were stacks of fuel, scantlings or something else is not clear.

The quantities in the School Circle are given in *solid* cubic feet. There were 22,699 cubic feet of firewood on hand from the previous year; 115,998 more were collected: of the sum of these, 70,137 were taken to depot, 267 were sold in the forest, 100 were lost by dryage, and the remainder (68,193 cubic feet) apparently constitute the closing balance.

10. The account of the School Circle also includes 1,000 *maunds* of charcoal made in the Dehra Dún division, and 947 *cubic feet* of the same article prepared in Jaunsár. All this, except 20 cubic feet, was sent to depot. The Conservators of the Central and Oudh Circles do not account for charcoal in No. 54, though it is entered in Nos. 55 and 56.

11. Excluding firewood and charcoal, the operations in the way of cutting, preparing, and exporting logs, poles, planks, sleepers, scantlings, &c., appear to have been as shown in the following table:—

	In hand.		*Cut and prepared during year.*		*Exports.*		*Closing balance.*	
	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.	Number.	Cubic feet.
Central Circle	27,535	39,917	221,314	362,155	91,492	176,182	157,357	225,890
Oudh "	250,591	644,120	126,357	617,723	174,527	692,932	202,421	568,911
School "	63,798	192,985	47,669	66,188	47,238	66,340	64,229	192,833
Total ...	341,924	877,022	395,340	1,046,066	313,257	935,454	424,007	987,634

12. The statements, for the Central and Oudh Circles, in form No. 55, of timber and other produce brought to depot, are as perplexing as those which have just been dealt with. The entries relating to timber, as distinguished from "other forest produce," do not tally, as they should, with those in No. 54, which show what was sent to depot. Amongst other discrepancies in the return of the Central Circle may be noticed the entries regarding "kirás," "kurias," and firewood in Jhánsi. It is impossible to reconcile the returns of the Oudh Circle; for example, no firewood

is accounted for in No. 55, although No. 54 shows that 2,549 maunds were sent; and in No. 56, 106 maunds are shown.

The following is an abstract of the account of timber and other forest produce :—

Circle.	Description of timber, &c.	Balance in hand.	Brought to depôt during the year.	Total.	Lost or used by the department.	Removed by purchasers.	Balance.
			Pieces.				
Central,	Timber (cubic feet) ...	53,907	164,103	218,010	1,119	157,557	59,048
	Bamboo (pieces) ...	10,996	337,639	348,635	...	337,725	10,910
	Baskets (ditto) ...	783	...	783	...	689	94
	Kirás and kurias (pieces),	8,772	44,607	53,379	...	32,874	20,505
	Firewood and charcoal (maunds).	1,039	146,748	147,787	130	137,795	9,862
	Lime (maunds) ...	8	6	14	8	6	...
	Grass (bundles) ...	23,692	...	23,692	23,692	...	...
Oudh ...	Timber (logs) ...	7,037	5,752	12,789	4,929	737	7,124
	Golas and ballis (pieces),	4,117	7	4,124	377	1,526	2,231
	Canoes and boats ...	1,046	130	1,176	14	68	1,084
	Scantlings (cubic feet) ...	38,598	99,760	138,358	32,181	95,037	11,140
	Charcoal (maunds) ...	597	$907\frac{11}{20}$	$1,504\frac{11}{20}$	50	$907\frac{11}{20}$	547
	Fuel (maunds) ..	$12,036\frac{13}{20}$	166	$12,202\frac{13}{20}$	4,000	...	$8,202\frac{13}{20}$
	Off-cuts (maunds) ...	...	5,623	5,623	2,549	3,074	...
School,	Timber (cubic feet) ...	42,746	61,431	104,177	2,100	82,147	19,930
	Fuel (cubic feet) ...	42,640	71,226	113,866	3,255	87,662	22,949
	Charcoal (maunds) ...	298	1,000	1,298	...	918	380
	Ditto (cubic feet) ...	...	927	927	...	927	...

The figures for the Oudh Circle are taken from an abstract given in the body of the Conservator's report, which it is found impossible to check by statement No. 56, on account of the variation in the classification.

13. The value of timber and other forest produce sold was as follows :—

	Central Circle.	Oudh Circle.	School Circle.	Total.
	Rs.	Rs.	Rs.	Rs.
I.—Timber and other produce removed from the forests by Government agency.	1,97,064	1,21,170	1,22,124	4,40,358
II.—Timber and other produce removed by consumers and purchasers.	2,56,540	1,54,806	78,831	4,90,177
Total ...	4,53,604	2,75,976	2,00,955	9,30,535

In addition to this a considerable quantity of timber and other forest produce was given free to villagers and others having recognised rights or privileges in the forests.

14. The results of transactions with public departments are summarised in the annexed table :—

	Amount of revenue.			*Cost of Forest Department.*			*Comparison of revenue and expenditure.*		
	Due.	Received.	Outstanding.	Timber expenses under A.I.	Quota of all others, &c.	Total.	Surplus.	Deficit.	Remarks.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
Central Circle ...	54,890	54,890	...	29,393	8,155	37,548	17,342	...	
Oudh " ...	68,435	66,187	2,248	24,761	3,848	28,609	39,825	...	
School " ...	1,11,536	1,11,003	533	79,873	8,098	87,971	23,032	...	

15. The value of the timber and stock (both live and dead) belonging to the Forest Department at the commencement of the year, the amount received during the year, the amount sold or otherwise disposed of, and the stock on hand at the close of the year, are shown in the following statement :—

Circle.	Description of timber and other stock.	On hand at commencement of year.		Received during the year.		Sold or otherwise disposed of.		On hand at close of year.	
		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
			Rs.		Rs.		Rs.		Rs.
Central.	Timber, including fuel ...	50,148	69,734	77,875	1,81,517	97,431	1,83,257	30,592	67,978
	Bamboos	10,996	72	337,639	1,775	337,725	1,761	10,910	86
	Buildings	46	49,253	6	5,089	...	...	52	54,342
	Elephants	8	14,000	...	...	...	...	8	14,000
	Bullocks	30	472	3	64	3	53	30	483
	Tools and plant ...	23,634	18,316	4,417	1,067	1,810	865	26,241	18,518
	Country carts ...	15	293	...	...	...	...	15	293
	Ordnance stores ...	Gunpowder, fuze, &c.	795	Gunpowder, &c.	795	Gunpowder, &c.	795	Gunpowder, &c.	795
	Total ... 1880-81 ...	...	...	...	...	...	...	...	1,56,495
	Total ... 1879-80 ...	...	...	...	...	...	...	...	1,48,566
Oudh.	Surveying and other instruments.	45	990	109	401	...	...	154	1,391
	Machinery	24	27,000	3	181	...	...	27	27,181
	Tools	4,102	3,992	202	218	122	63	4,182	4,147
	Office furniture ...	679	2,228	83	320	9	49	753	2,499
	Tent and equipage ...	55	2,079	16	311	5	152	66	2,238
	Building materials ...	194	1,111	117	284	53	155	258	1,240
	Miscellaneous ...	523	2,335	107	1,420	7	1,736	623	2,019
	Boats, canoes, and carts...	1,065	61,540	133	5,320	91	2,160	1,107	64,700
	Buildings	21	45,500	9	8,100	1	1,000	29	52,600
	Elephants	8	20,200	2	6,600	2	5,300	8	21,500
	Bullocks	8	200	8	320	...	...	16	520
	Buffaloes	24	240	...	...	3	30	21	210
	Timber, including fuel ...	...	1,47,619	...	...	...	...	...	1,76,745
	Total ... 1880-81 ...	...	...	...	...	...	...	...	3,56,990
	Total ... 1879-80 ...	...	...	...	...	...	...	...	3,15,034
School.	Timber of all kinds ...	28,005	37,281	45,228	86,805	62,579	1,05,969	10,654	18,117
	Fuel, cubic feet ...	42,640	9,912	71,226	16,558	90,917	21,582	22,949	4,888
	Charcoal ... Cubic feet,	...	...	927	230	927	230	...	...
	Charcoal ... Maunds...	298	119	1,000	500	918	459	380	160
	Other dead stock ...	4,269	56,985	1,043	6,551	710	1,687	4,602	61,849
	Elephants	3	6,800	...	...	...	...	3	6,800
	Total ... 1880-81 ...	...	...	...	...	...	...	...	91,814
	Total ... 1879-80 ...	...	...	...	...	...	...	...	1,11,097

16. The financial results for the year will now be examined. The following table compares the receipts, expenditure, and surplus of the year under review with those of the preceding year:—

Financial results.

	Receipts.		Expenditure.		Surplus.	
	1879-80.	1880-81.	1879-80.	1880-81.	1879-80.	1880-81.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	3,67,601	4,57,607	2,32,234	2,62,437	1,35,367	1,95,170
Oudh "	3,84,923	2,81,980	2,45,547	2,17,036	1,39,376	64,944
School "	2,87,442	2,02,642	2,38,813	2,00,101	48,629	2,541
Total ...	10,39,966	9,42,229	7,16,594	6,79,574	3,23,372	2,62,655

The expenditure was equal to 72·1 per cent. of the revenue; the percentages in the different Circles being as shown in the margin. The report of the Central Circle purports to give this information for the various divisions, but owing to the presence of uncorrected press errors, the figures are quite misleading.

Central	... 57·3
Oudh	... 76·9
School	... 98·7

17. The receipts were derived from the following sources:—

	I.	II.	III.	IV.	V.
	Timber and other produce removed from the forests by Government agency.	Timber and other produce removed from the forests by consumers or purchasers.	Confiscated, drift, and waif wood.	Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	1,97,064	2,56,540	2,051	1,952	4,57,607
Oudh "	1,21,170	1,54,806	3,414	2,590	2,81,980
School "	1,22,124	78,831	1,177	510	2,02,642
Total ... 1880-81 ...	4,40,358	4,90,177	6,642	5,052	9,42,229
Total ... 1879-80 ...	6,35,714	3,90,722	6,244	7,286	10,39,966

18. As compared with the preceding year, the revenue yielded by each division was as follows:—

Circle.	Division.	1879-80.	1880-81.	+ or −
		Rs.	Rs.	Rs.
CENTRAL ...	Naini Tal	21,426	35,782	+14,356
	Kumaun	1,65,574	1,85,371	+19,797
	Ránikhet	7,165	36,605	+29,440
	Garhwál	1,11,795	1,26,662	+14,867
	Ganges	50,970	61,356	+10,386
	Jhánsi	3,648	3,755	+107
	Lalitpur	7,023	8,076	+1,053
OUDH ...	Kheri	2,75,936	50,441	−2,25,495
	Bhira	...	7,162	+7,162
	Bahramghát	...	1,11,316	+1,11,316
	Bahraich	44,098	30,165	−13,393
	Gonda	19,942	30,753	+10,811
	Gorakhpur	36,231	43,118	+6,887
	Pilibhít	8,716	9,025	+309
SCHOOL ...	Direction	...	14	+14
	Dehra Dún	41,482	54,948	+13,466
	Jaunsár	43,875	30,570	−13,305
	Tons	1,70,580	90,030	−80,550
	Saháranpur	31,505	27,080	−4,425
	Working Plan Division ...	...	...	...
	Total ...	10,39,966	9,42,229	−97,737

19. The gross receipts and the net surplus in the Central Circle were larger than in the preceding year, and nearly reached those of 1878-79. It would have been as well had the Conservator, in the body of his report, said a few words regarding this improvement. In the Oudh and School Circles there was a considerable diminution of receipts, due, in Oudh, to the curtailment of the fellings ordered by the Government of India, and, in the School Circle, to the decreased demand during the year for sleepers for State Railways, and for fuel and timber for the cantonments at Chakráta.

20. The following tables show the expenditure under the two main heads—(A.) Conservancy and Works, and (B.) Establishments :—

A.

	I. Timber and other produce removed from the forests by Government agency.	II. Timber and other produce removed from the forests by consumers or purchasers.	III. Confiscated, drift, and waif wood.	IV. Rent of leased forests.	V. Live stock, stores, &c.	VI. Communications and buildings.	VII. Demarcations, improvements, &c.	VIII. Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	77,955	17,243	537	4,000	6,329	27,480	25,722	1,078	1,60,344
Oudh "	71,263	6,687	172	...	8,245	33,928	14,648	656	1,35,599
School "	80,196	4,812	11	8,501	4,425	10,318	8,835	2,376	1,19,474
Total { 1880-81 ...	2,29,414	28,742	720	12,501	18,999	71,726	49,205	4,110	4,15,417
Total { 1879-80 ...	2,55,103	26,455	450	12,504	25,712	92,162	47,820	3,385	4,63,591

B.

	I. Salaries.	II. Travelling allowances.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
Central Circle	89,483	8,620	3,990	1,02,093
Oudh "	66,104	11,234	4,099	81,437
School "	65,769	11,580	3,278	80,627
Total { 1880-81 ...	2,21,356	31,434	11,367	2,64,157
Total { 1879-80 ...	2,12,795	29,737	10,470	2,53,002

21. The receipts and expenditure under the three great heads—

I.—Departmental timber operations ;

II.—Other revenue ;

III.—Formation, protection, and improvement of forests ;

were as follows :—

	Departmental timber operations.			*Other revenue.*			Formation, protection, and improvement charges.	Net surplus.
	Receipts.	Charges.	Surplus.	Receipts.	Charges.	Surplus.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	1,97,064	1,30,667	66,397	2,60,542	63,339	1,97,203	68,431	1,95,169
Oudh "	1,21,170	86,738	34,432	1,60,810	44,321	1,16,489	85,976	64,945
School "	1,22,123	1,02,887	19,236	80,519	26,485	54,034	70,729	2,541
Total ...	4,40,357	3,20,292	1,20,065	5,01,871	1,34,145	3,67,726	2,25,136	2,62,655

22. Looking to the amount of the decrease in the revenue from timber and other produce removed from the forests of the Oudh and School Circles by Government agency, it might have been expected that

there would be a more marked diminution in the expenditure under this head. The figures are:—

	1879-80.			1880-81.		
	Receipts.	Expenditure.	Percentage of receipts expended.	Receipts.	Expenditure.	Percentage of receipts expended.
	Rs.	Rs.		Rs.	Rs.	
Oudh Circle	2,42,410	1,32,786	54·7	1,21,170	86,738	71·5
School "	2,16,324	1,17,579	54·3	1,22,124	1,02,887	84·2

23. The actual profits of the year, as shown by the Conservators of the Central and School Circles, are given below, and compared with the results of 1879-80; and an endeavour has been made to extract similar information regarding the School Circle. If this last be correct, it would seem that there was really a deficit in the School Circle, owing to a reduction of the stock of timber, which was not counterbalanced by new fellings:—

	1879-80.	1880-81.
	Rs.	Rs.
Central Circle	1,38,192	1,84,181
Oudh "	1,10,651	1,06,900
School "	78,591	*Deficit.* 8,847

It is not clear that the calculations have been made in the same way in every Circle, and care should be taken that this is done in future. The method adopted in the Central Circle seems the best; and information in that shape may, with advantage, be given in the body of each Conservator's report.

24. The detailed statements, of which an abstract is given above, is as follows:—

Particulars.	Amount.
Central Circle.	Rs.
Receipts of the department during 1880-81	4,57,607
Expenditure ditto ditto	2,62,437
Surplus	1,95,170
Value of timber at the commencement of the year	69,806
Ditto at close of the year	68,064
Difference against the year to be deducted	1,742
Balance	1,93,428
Value of live and dead stock at commencement of the year	83,129
Ditto ditto at close of the year	88,431
Balance to be added	5,302
	1,98,730
Deduct—	
Amount of revenue realised on account of previous periods	*Nil.*
Balance	1,98,730

Particulars.		Amounts.
Central Circle—(concluded).		Rs.
Add—		
Outstandings of the year *minus* bad debts		8,162
		2,06,892
Add—		
Amount disbursed on account of previous periods		1,170
		2,08,062
Deduct—		
Amount due on transactions of the year, but not yet paid		10,925
		1,97,137
Deduct—		
Outstandings at commencement of the year		12,956
Balance showing actual profits of the year		1,84,181
Oudh Circle.		
Receipts		2,81,980
Expenditure		2,17,036
Surplus		64,944
Deduct—		
Decrease in value of timber stock		*Nil.*
Balance		64,944
Add—		
Increased value of live and dead stock and of timber		41,956
Net surplus		1,06,900
School Circle.		
	Rs.	
Surplus revenue of the year	2,541	
Add—		
Balance of outstandings at close of year in favour of department	1,14,141	
		1,16,682
Deduct—		
Decreased value of stock	19,283	
Balance of outstandings at commencement of year in favour of department ...	1,06,246	
		1,25,529
Balance in favour of department		*Nil.*
Deficit		8,847

25. The outstandings and liabilities on account of contractors and disbursers are shown in the annexed table:—

	Department, debtor.			*Department, creditor.*			*Balance due.*	
	At commencement of year.	Recoveries in cash, &c.	At close of year.	At commencement of year.	Payments made during the year.	At close of year.	To department (outstandings).	By department (liabilities).
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle	65	54,970	55,035	12,220	49,027	61,247	7,506	1,294
Oudh "	70	2,28,527	2,28,597	21,526	2,32,001	2,53,528	25,035	105
School "	28	85,981	86,009	1,01,308	86,398	1,87,706	1,01,697	...

Of the balance due to the department in the School Circle, Rs. 90,000 were due by Messrs. Winton and Braidwood. The Conservator anticipated the early adjustment of this.

Captain Wood supplements the return for the Oudh Circle by one showing the outstandings and liabilities on account of timber sales, principally at Bahramghát. From this it would seem that, at the close of the year, whilst the department was owed Rs. 2,258 for timber supplied, it was liable for Rs. 6,519 worth of timber paid for in advance.

26. The outstandings on account of revenue were as follows:—

					Rs.
Central Circle	...	...	...	...	656
Oudh "	....	...	...	...	34,996
School "	...	...	...	...	12,444
			Total	...	48,096

Apparently much of the large balance in the Oudh Circle represented arrears of grazing dues, but the matter should have been more fully explained. The various questions, which at one time impeded the collection of these dues, were disposed of two years before the close of the year under report, and the old balances should have been long since adjusted or reported on.

In the School Circle Rs. 10,000 were due from Public Works officers, and the remainder (Rs. 2,444) on account of grazing dues.

27. In the following table the work done at the Bahramghát saw-mills, during the year under review and the two preceding years, is compared, and the saving on the cost of the work at hand labour rates is shown:—

Year.	Value of work at hand labour rates.	Expenditure.	Saving.
	Rs.	Rs.	Rs.
1878-79	13,662	10,367	3,295
1879-80	13,997	10,130	3,867
1880-81	9,296	8,532	764

The work was small in amount, and cost within a pie of Rs. 19 per 100 cubic feet, as compared with Rs. 13⅓ in 1879-80, and Rs. 16¾ and Rs. 20 in the two preceding years. The increased cost is ascribed to the frequent stoppages caused by failure of some of the old machinery ; still, as the table shows, there was a small saving on hand rates, and the Conservator says that "the work was really of a more paying character."

General.

28. There are few miscellaneous questions to refer to.

Regarding the Forest School, it can hardly be said to have been in working order during the year. In consequence of the insufficiency of the staff, and the incompleteness of the buildings, &c., no theoretical instruction was given. During the year the buildings were put in order, a laboratory and library were established, and collections made of herbariums and mineral and geological specimens. At the commencement of the year there were attached to the School four European and one native probationers ; one European and two natives joined during the year ; and three Europeans left on appointment as Sub-Assistant Conservators. This left five probationers at the School at the close of the year. The native probationers were all Bengalis : it is to be regretted that, for service in Upper India, it was not found possible to obtain as probationers

natives of Upper India. Besides the probationers, there were five native apprentices seeking to qualify themselves for rangers' certificates. Although the Government of India approved of the admission to the School of candidates from Native States, none were sent.

29. Rules were framed under the provisions of the Forest Act and promulgated, for regulating the exercise of rights and of shooting and fishing in protected forests, and the transport of timber and other forest produce by land or water. Special rules were also issued to have effect in the forests of the Dehra Dún and of Saháranpur respectively; and rules and regulations for the management of the forests leased from the Rája of Tehri-Garhwál, drawn up with the approval of the Rája, were sanctioned.

30. In addition to these, rules for the collection of grazing dues, through the agency of the revenue authorities, were introduced in Dehra Dún and Saháranpur : they generally worked well, but with more success in the former than the latter district.

31. In the Oudh Circle a system was introduced whereby the forest divisional officer is, in most respects, made the subordinate of the Collector, and that officer and the revenue authorities generally are given more direct interest and concern in forest administration. The Lieutenant-Governor has learnt with satisfaction that the plan has, in practice, been found to promote efficiency, and that it has met with the approval of both the forest and revenue officers by whom it has been tried ; it has consequently been extended, since the close of the year, to the Central and part of the School Circle.

32. Major Bailey has prepared a summary, which should be very useful to forest officers, of the orders relating to the execution of contracts and other instruments connected with the administration of forests, and with the business of the Forest Department generally.

33. From both the Central and the School Circles consignments of box-wood were sent to England, and yielded a handsome profit. The Conservator of the School Circle gives no details, but Mr. Greig writes that 121 box trees were felled in the leased forests above Kelsú ; about 6 tons and 8 cwt. of timber from these trees was sent to England, and there realized the extreme price of £30 per ton. There was an unusual dearth in the market when this wood arrived in England, but it seems certain that a considerable profit could always be obtained. A careful inquiry is being made with a view to ascertain in what localities the wood is to be found, and in what quantities.

34. In conclusion, the Lieutenant-Governor is constrained to remark that the reports of Conservators still leave much to be desired, both as regards construction and contents. To comprehend and review them is an infinitely more difficult task than to do this for the reports which come before His Honor from any other department. The minute figured appendices are, perhaps, indispensable ; at any rate, the Conservators have no discretion regarding these, except in so far that they can take care to secure their accurate compilation in a uniform manner ; but it should be

their object to write readable and intelligent accounts of the year's transactions, noticing all matters of interest, and furnishing all necessary explanations. There seems no reason why as interesting an account should not be given of the administration of a forest circle, as of a revenue district; and it should be the object of Conservators, when writing their reports, to infuse a little life into their figures, and not submit a compilation, the text of which is quite as dry as the statements.

35. What were the main outlines of operations during the year (departmental, khám tahsíl, &c.); what were the objects chiefly kept in view by each divisional officer; how did his rangers and other assistants perform their duties; who were the chief purchasers of the produce; how far does the class of timber produced meet the demand of the public, and in what directions are improvements or changes called for; what were the relations between the people in the villages on the borders of the forest and the forest officials; how have native *shikáris* been dealt with; has forest conservancy produced any increase of wild animals;—all these matters are either not mentioned at all, or are mentioned in a fragmentary and unsatisfactory manner. His Honor believes that these things are not neglected or overlooked; but if supervision is to be of any value, some account of the various matters should be given in the annual reports.

The Lieutenant-Governor and Chief Commissioner hopes that the remarks above recorded will not be misunderstood. Forest officers are so well acquainted with every detail of their administration, that they may often deem it superfluous to state details. They should however remember that the Government cannot do justice to their work, unless such an account is given as will hold a mirror to the year's transactions. If the present reports fail to do this satisfactorily, they are at least an improvement on their predecessors; but an effort should in future be made by clear and lucid writing to place the Government in a position to grasp the outlines of the year's work.

36. With reference to the orders of the Government of India, No. 764, dated the 26th August, 1881, and No. 821F., dated 17th September, 1881, the Lieutenant-Governor desires to recommend the following Sub-Assistant Conservators, who have, by their zeal, efficiency, and generally satisfactory conduct, established a claim to this consideration, for promotion to the rank of Assistant Conservator. The names are given in the order of relative merit:—

Mr. A. Campbell, *Offg. Asst. Conservator.*

Mr. J. C. Murray.

Mr. B. A. Rebsch.

A separate communication showing in greater detail the reasons for these recommendations follows.

G. E. ERSKINE,

Secy. to Govt., N.-W. P. and Oudh,
in the Rev. Dept. (Forest Branch).

No. 820.

Copy, with copy of report, forwarded to the Conservators of Forests, Central, Oudh, and School Circles, and to the Commissioners of Meerut, Benares, Jhánsi, Rohilkhand, Kumaun, Sitapur, and Fyzabad Divisions, for information.

No. 821.

Copy, with copy of report, also forwarded to the Comptroller-General, Calcutta, for information.

No. 822.

Copy, with copy of report, also forwarded to the Inspector-General of Forests, for information.

W. R. BARRY,

Offg. Under-Secy. to Govt., N.-W. P. and Oudh,
in the Rev. Dept. (Forest Branch).

CENTRAL CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT

OF

FOREST ADMINISTRATION

FOR THE YEAR ENDING 31st MARCH, 1882.

By G. Greig, Esq., Conservator of Forests, Central Circle.

CHAPTER I.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

All the divisions of the Central Circle were visited by me during the year, except Jhánsi, Lalitpur, and the newly-formed division of Bánda. I had arranged to go to Jhánsi, and perhaps on to Lalitpur, in November, but this arrangement was upset by my being suddenly ordered by Government to attend a meeting at Awagarh. I also inspected the canal plantations of the Bulandshahr, Meerut, and Northern Divisions, and part of the Aligarh Division, and submitted a report on them.

2. The following table shows the divisions and the officers who held charge of them during the year:—

Division.	Officers in charge.	Remarks.
Naini Tal ...	Mr. Braidwood ...	Whole year.
Ránikhet ...	" Brereton ...	From 1st April to 19th June and from 9th November to close of the year.
	" O. Grieg ...	From 19th June to 9th November, in addition to his other duties.
Kumaun ...	Major Campbell ...	From 1st April to 27th June.
	Mr. O'Callaghan ...	From 28th June to close of year.
Garhwál ...	" O. Greig ...	
Ganges ...	" Wilmot ...	
Jhánsi ...	District Officer ...	
Lalitpur ...	Ditto ...	
Bánda ...	Ditto ...	Constituted a Forest Department Division in September, 1881.

3. In accordance with the orders contained in North-Western Provinces and Oudh Government Resolution No. 76A., dated 20th October, 1881, the Forest Officers of this Circle were made subordinate to the chief district revenue officers, subject to the restrictions contained in North-Western Provinces and Oudh Government Resolution No. 741, dated 14th July, 1880, as follows :—

The Officers in charge of the Naini Tal, Ránikhet, Kumaun, Garhwál, and Ganges Divisions are subordinate to the Commissioner of Kumaun in respect of forests within the Kumaun Commissionership or in the Tehri State, and to the Collector of Bijnor in respect of forests in the Bijnor district. Certain correspondence between the Conservator and the Local Government is also forwarded through the Commissioner.

At first this new system created a great deal of extra writing both for the Commissioner and the Conservator, but now that the newness has worn off it is working smoothly.

4. Annual plans of operations for the working of the forests were issued to Divisional Officers as usual. This system has been in force since 1878-79.

SECTION 1.—AREA AND BOUNDARIES.

5. Form 49 gives a detailed list of all the forests and their areas.

There is no change in the area of the forests of the Ránikhet, Kumaun, Garhwál, Ganges, Jhánsi or Lalitpur Divisions:—

(*a*) **Naini Tal Division.**—PROTECTED FORESTS.—The estimated area of these forests, as given in Form No. 45 of last year's annual report, was 24,408 acres. Since then the forest survey maps have been published and the correct area, worked out by the Forest Survey Department, is 22,937 acres, 3,299 acres of which are village lands within the forests.

(*b*) The following statement shows the areas of the forests of the Central Circle during 1880-81 and 1881-82:—

Year.	Area of reserved forests.	Area of protected forests.	Remarks.
	Acres.	Acres.	
1880-81 ...	942,146	65,010	* The decrease of 1,471 acres is due to the corrected calculation of the area of the forests of the Naini Tal Division by the Forest Survey Department.
1881-82 ...	942,146	63,539*	

(*c*) In addition to the above are the Bánda forests, which were constituted a Forest Department Division of this Circle in September, 1881.

The following statement shows the extent of these forests:—

Area acquired by Government.		Area remaining to be acquired by Government. *N. B.*—This area is under Government control, Government receiving 55 per cent. of the profits and the proprietors 45 per cent.
Within the forest line.	Without the forest line.	
53,535·73 acres.	716 acres.	21,208·19 acres.

The 716 acres outside the forest line will, it is believed, soon be exchanged for land within the forest line.

Negotiations for the acquirement of the 21,208·19 acres are proceeding. The agreement under which the division of profits is made was a five years' agreement. A copy of this agreement is appended to letter No. 2F., dated 5th February, 1880, from Collector of Bánda to the Commissioner of the Allahabad Division.

6. DEMARCATION.—Considerable progress has been made during the year, and very little demarcation work now remains to be done; probably it will be quite completed during 1882-83.

(*a*) The forests of the Naini Tal Division are completely demarcated, and also the village lands within the forests, and nothing remains to be done beyond keeping the pillars in repair.

(*b*) **Ranikhet Division.**—The remainder of the village lands within the forests were demarcated during the year.

(*c*) **Kumaun Division.**—The Deputy Conservator reports that all the boundaries are completely demarcated. Five pillars erected during the year completed the demarcation of the Hurai forest. The demarcation of the village lands in the Chilkia and West Kotah ranges was completed; 478 pillars were erected in the Talla Des range, which completed the demarcation of all the village lands and the outer boundaries; 12 pillars were erected in block 13, and the boundaries of the portions of the reserved forests which are open to the exercise of recorded rights were all demarcated.

(*d*) **Garhwal Division.**—Most of the intermediate kucha pillars of the outer boundaries have been replaced by pucka masonry ones properly numbered, but the work was not quite finished at the close of the year. The boundaries of all village lands within the forest, except one plot, were properly demarcated with pucka numbered pillars.

The numbering of the pillars which demarcate the boundaries of the portions of the reserved forests which are open for the exercise of recorded rights was not quite completed by the close of the year.

(*e*) **Ganges Division.**—The demarcation of the outer boundaries is completed.

The village lands within the reserved forests were completely demarcated, but 80 of the temporary pillars have to be replaced by permanent ones. During the year 164 permanent and 84 temporary pillars were erected.

Fifty-three masonry pillars were also erected at the angles of the portions of the reserved forests which are open to the exercise of recorded rights.

All the pillars are properly numbered.

The above refers to the portion of the division which is within British Garhwál. A large block of the Tehri Garhwál leased deodar forest has recently (since the close of the year under report) been declared reserved, the rights within this block have been recorded, and the village lands have been demarcated by 97 temporary loose masonry pillars which will now be replaced by permanent masonry ones.

The Superintendent of the Forest Survey Department has been addressed with a view to getting this block surveyed and mapped on a scale of 4 inches=1 mile.

(*f*) The Jhánsi and Lalitpur forests are permanently demarcated.

(*g*) The following statement shows the state of the boundaries of the reserved and protected forests at the close of the year 1881-82.

Division.	Class of forest.	Remarks.
Naini Tal ...	Protected ...	All boundaries have been demarcated.
Ránikhet ...	Reserved and protected.	Ditto ditto ditto.
Kumaun ...	Reserved ...	Ditto ditto ditto.
Garhwál ...	Reserved ...	A few of the intermediate temporary pillars of the outer boundaries have to be made permanent. One plot of village land remains undemarcated. The numbering of the pillars which demarcate the boundaries of the portions of the forests which are open for the exercise of recorded rights was not quite finished.
Ganges ...	Reserved forests within British territory.	All the boundaries were demarcated; the only work remaining to be done was the erection of 80 permanent pillars, to replace that number of temporary ones on the boundaries of village lands.
	Reserved leased forest in Tehri Garhwál.	This forest is defined by natural boundaries. The village lands within it have been demarcated by temporary pillars which have to be replaced by permanent ones.
Jhánsi ...	Reserved ...	All boundaries have been demarcated.
Lalitpur ...	Reserved and protected.	Ditto ditto ditto.

(*h*) The Bánda forests are demarcated on the side where they adjoin native territory by the boundary line which separates British territory from the Native States of Bundelkhand. In some places the boundary is marked by masonry pillars, but generally has been determined to be the foot of the perpendicular sandstone cliff locally called "Arri." Elsewhere the boundary has been marked by cut lines through the forest, which, the Collector remarks, have got very much overgrown within the last three years.

(*i*) Rs. 2,979 were spent on demarcation work in this Circle during the year.

7. On the 1st April, 1881, the superior staff consisted of—

One Conservator.
Three Deputy Conservators.
Two Assistant Conservators.

8. The amount sanctioned for subordinate forest and office establishments during 1881-82 was a monthly maximum of Rs. 3,022, distributed amongst divisions as follows :—

Division.	Clerks or munshis.	Daftris or chaprasis.	Forest rangers.	Foresters.	Forest guard.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	295	18	...	...	...	...
Naini Tal	20	...	..	15	75	...
Ránikhet	45	...	...	40	122	...
Kumaun	175	...	70	356	386	...
Garhwál	150	8	70	227	313	...
Gauges	105	13	...	120	155	...
Jhánsi	5	...	...	30	62	...
Lalitpur	17	...	...	30	100	...
Total ...	812	39	140	818	1,213	3,022

9. Breaches of Forest Rules.—The following table shows the results of the year compared with the results of 1880-81 :—

Year.	Cases pending from 1880-81.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of the year.
		Injury to forests by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons	Cases.	Persons.	
1880-81,	...	14	203	15	156	388	388	336	663	52	165	388	828	5
1881-82,	5	7	148	16	177	348	353	331	656	20	78	351	734	2

The most important case during the year was one in the Kumaun Division, in which the defendant was convicted by the Magistrate, but was let off by the Commissioner on appeal.

The cases under the heading "other offences" were petty affairs, such as non-delivery of passes within the specified limit of time, losing passes, exporting head-loads of firewood and grass without authority, &c., &c.

It has been the custom in this Circle for divisional officers to show in Form 52 all fines imposed by them for petty offences without any recorded proceedings, and this of course swells the number of "cases" enormously. For instance, the Kumaun Division shows, for 1881-82, 192 cases, including 386 persons, whereas there were actually only *four* cases which were *bonâ fide* tried either by the District Magistrate or by the Forest Officer in his magisterial capacity.

In his resolution on last year's annual report the Hon'ble the Lieutenant-Governor remarked on the large number of "cases" in the Central Circle, and the above remarks explain why there appear to be so many.

I shall be glad of orders on this point. In my opinion only those "cases" should be shown in Form No. 52 which have actually been tried by an officer invested with magisterial powers.

10. Roads and Bridges.—Existing roads were repaired and some widened and improved.

The following new roads were made during the year:—

(a) *Naini Tal Division.*

	Rs.
One road, length 2 miles 6½ chains, breadth 5 feet, cost	109
" " 46 chains, " 3 "	17

(b) *Kumaun Division.*

One road, length 2 miles, breadth 18 feet, cost	40
" 1 mile 24 chains 18 "	2,203

(c) *Garhwál Division.*

One road, length about 6 miles, breadth 12 feet, cost	3,750
" 6 miles, 65 chains, " 6 "	335
" 5 " 40 " " 12 "	370
" 1 mile, 74 " " 12 "	1,084
" 2 miles, 72 " " 12 "	186
" 1 " 62 " " 6 "	284

(d) *Ganges Division.*

Three bridle roads, length 17¾ miles, breadth 6 feet, cost	110

Rs. 8,488 were spent on new roads.

Rs. 17,019 were spent on repairing existing roads.

Rs. 781 were spent on repairing fences.

(e) A temporary bridge was put up over the Ramganga river, in the Garhwál Division, at a cost of Rs. 236, and a very fine permanent bridge was erected over the Chinal stream, in the Kumaun Division, at a total cost of Rs. 1,469, Rs. 866 of which were spent during 1881-82 (see para. 58).

11. Buildings.—Rs. 6,820 were spent on new buildings, and Rs. 1,180 on repairs of existing ones (see paras. 29, 59, 74, 90, 106, and 119).

12. Wells.— Rs. 51 were spent on a temporary well in the Ganges Division (see paragraph 91), and Rs. 100 on making a well in the Lalitpur Division (see para. 119).

13. Reproductive measures:—

(a) **Naini Tal Division.**—303 deodars, 4,502 walnuts, and 9,180 ash were planted out. The ash seedlings were raised on the spot; the deodars and walnuts were brought over from the Ránikhet nursery.

Seven hundred seed patches were sown with walnuts and 2,260 with karsu (*Quercus semecarpifolia.*) The work cost Rs. 624 (see para. 30).

(b) **Ranikhet Division.**—The following amounts of seed were sown during the year:—14lb of peach, 18¾ of Australian acacia, 18 packets of Eucalyptus, 110lb of Himalayan ash and pine, and 344lb of wild pear for fencing.

Three thousand and sixteen alders and 89 sweet chestnuts were planted in the reserved forest.

Six thousand and seventy-eight grafted fruit trees and 13,082 forest trees were distributed gratis to house-holders, villagers and others, and 64 grafted fruit trees were sold for Rs. 64.

The stock in the nursery consists of 365,296 forest trees and 96,029 fruit trees. The cost of plantation and nursery work during the year was Rs. 1,866. For further particulars see paras. 44 and 45.

(c) **Kumaun Division.**—Rs. 561 were spent on keeping up existing plantations and the Ramnagar Garden, but nothing new was undertaken (see para. 60).

(d) **Ganges Division.**—Rs. 180 were spent on garden and planting camping grounds (see para. 92).

(e) **Jhansi Division.**—140 teak trees, 399 shisham, and 91 tun were planted and some teak and babul seed was sown. Plantation work during the year cost Rs. 318, of which Rs. 243 was for watering (see para. 107).

14. Cutting Creepers.—6,954 creepers were cut by forest guards in the Kumaun Division, and Rs. 44 were spent on that work in the Garhwál Division.

SECTION 3.—YIELD AND WORKING.

15. The following statements show the timber operations of the year :—

(a) *Trees felled by Departmental Agency (selection fellings).*

Division.	Sál.	Sein.	Deodar.	Boxwood.	Teak.	Chir.	Oak	Ash.	Rhododendron.	Jamun.	Haldu.	Miscellaneous.
Naini Tal ...	...	...	...	...	...	1,372	111	...	248	...	...	122
Ránikhet ...	...	...	...	...	...	1,733	136	...	...	...	...	214
Kumaun ...	2,245	803	...	...	...	...	...	...	...	81	119	...
Garhwál ...	287	2,002	...	...	...	...	...	...	...	...	...	...
Ganges ...	2	448	861	330	...	...	...	2	...	...	...	14,327
Jhánsi ...	...	...	...	...	77	...	...	...	...	...	...	410
Lalitpur ...	...	...	...	...	...	...	...	...	...	...	...	134
Bánda ...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	2,534	3,253	861	330	77	3,105	247	2	248	81	119	15,207

The classification and cubic contents are given in the abstract at foot of form 58.

(b) *Trees felled by Departmental Agency (clearances).*

Division.	Sál.	Dhauri.	Remarks.
Kumaun ...	8	1	There were also 90 maunds of firewood prepared from "clearances" in the Lalitpur Division, (*vide* Form 59).
Total ...	8	1	

(c) *Trees felled by Departmental Agency (thinnings).*

Division.	Kiras of various kinds of trees.	Kurias of various kinds of trees.	Remarks.
Jhánsi ...	3,948	29,915	There were also 1,734 maunds of firewood and 614 maunds of charcoal prepared from thinnings in the Jhánsi Division, and 1,248,847 bamboos in the Jhánsi Lalitpur, and Bánda Divisions, (*vide* Form No. 59).
Lalitpur ...	...	2,71,592	
Total ...	3,948	301,507	

(d) *Trees given free to village rightholders, to His Highness the Nawab of Rampur, to the Executive Engineer, Kumaun Provincial Works, for repairs of bridges, and to the Commissioner of Kumaun for Kosi river irrigation works.*

Division.	Sál.	Sisham.	Khair.	Tún.	Deodar.	Chir (mature)	Chir (poles).	Sandan.	Sein.	Alder.	Oak.	Miscellaneous (mature).	Miscellaneous (poles).	Bamboos.
Naini Tal,	...	...	...	...	...	72	100	...	...	10	91	126	3,606	...
Ranikhet...	...	...	...	...	...	446	4,177	...	...	...	695	52	...	...
Kumaun ...	*625	†37 & 2,562 pieces	†834 trees & 1,806 pieces.	2‡	...	...	...	...	...	...	...	...	§13,739 & 169 pieces	‡682 scores.
Garhwál ...	3	2	...	...	...	...	...	2	...	...	...	...	...	...
Ganges ...	34	...	...	...	246 (dry).	339	...	4	33	...	...	160	...	...
Total ...	662	39 & 2,562 pieces.	834 trees & 1,806 pieces	2	246 (dry).	857	4,277	6	33	10	786	338	17,345 & 169 pieces	682 scores.

* Includes 200 trees given to His Highness the Nawab of Rampur, four to Executive Engineer, Kumaun Provincial Works, and 421 to village right-holders.

† Used by Commissioner of Kumaun for Kosi river irrigation works.

‡ To village right-holders.

§ 514 refuse chir slabs.

(e) *Trees felled and removed by purchasers.*

Division.	Sál.	Sein.	Chir.	Miscellaneous.
Naini Tal	...	...	3	5,431
Ránikhet	...	...	250	...
Garhwál	1,855	36	...	...
Total ...	*1,855	*36	† 253	‡ 5,431

(f) *Timber removed by purchasers.*

Division.	Sál.	Sein.	Sisham.	Sandan.	Tun.	Khair.	Deodar.	Chir.	Haldu.	Jamun.	Miscellaneous.
Naini Tal ...	...	...	...	...	...	...	...	48	...	...	5,431
Ránikhet ...	...	...	...	...	...	...	...	14,736	...	...	...
Kumaun ...	110,112	505	37,038	602	2,378	85,195	...	...	64,937	476	...
Garhwál ...	85,704	3,783	1,005	6,837	975	31,417	...	...	...	...	17,643
Ganges ...	13,645	17,338	1,026	1,491	...	...	716	...	...	...	13,124
Jhánsi ...	...	...	...	...	...	...	...	...	...	...	264
Lalitpur ...	...	...	...	...	...	...	...	...	...	...	21,671
Bánda ...	...	...	...	...	...	...	...	...	...	...	...
Total ...	209,461	21,626	39,069	8,930	3,348	1,16,612	716	14,784	64,937	476	58,13

Add:—

Naini Tal Division ...	Firewood	...	41,615	maunds.
	Ringals	...	201	loads.
Ránikhet " ...	Firewood	...	4,600	maunds.
Kumaun " ...	Firewood	...	46,328	ditto.
	Bamboos	...	220,960	in number.
Garhwál " ...	Firewood	...	43,920	maunds.
	Bamboos	...	8,045,307	in number.
Ganges " ...	Firewood	...	22,454	maunds.
	Bamboos	...	10,913,768	in number.
Jhánsi " ...	Firewood	...	1,729	maunds.
	Charcoal	...	157	ditto.
	Bamboos	...	8	in number.
	Kiras	...	128	ditto.
	Kurias	...	91,540	ditto.
Lalitpur " ...	Firewood	...	7,840	maunds.
	Bamboos	...	354,238	in number.
	Kurias	...	20,200	ditto.

Total.

Firewood	...	168,486	maunds.
Charcoal	...	157	ditto.
Ringals	...	201	loads.
Bamboos	...	19,534,281	in number.
Kiras	...	128	ditto.
Kurias	...	111,740	ditto.

(g) *Timber brought to depôt from the forest.*

	Sál logs.	Haldu logs.	Sál karis.	Haldu karis.	Sein karis.	Chir karis.	Jamun karis.	Dhauri karis.	Kukat karis.	Sál planks.	Haldu planks.	Chir planks.	Sál joras and ballis.	Sisham and kukat scantlings.	Boxwood pieces.	Ash pieces.	Miscellaneous ballis, &c.	Total Number.	Total Cubic feet.
Naini Tal ...	...	...	...	...	...	5,312	...	...	...	...	...	19,251	...	...	...	...	...	24,563	18,995
Ránikhet, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kumaun,	397	4	10,615	1,232	7,744	...	1,117	28	...	30	174	...	273	...	...	...	...	21,614	52,035
Garhwál, ...	...	...	3,327	...	21,497	...	...	...	...	...	...	...	...	...	...	...	...	24,824	41,566
Ganges ...	...	...	...	...	12,682	...	...	...	6,793	...	...	...	2	14,849	153	2	...	34,481	55,464
Jhánsi ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	462	462	770
Lalitpur,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	509	509	763
Bánda ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3,223	3,223	5,707
Total ...	397	4	13,932	1,232	41,923	5,312	1,117	28	6,793	30	174	19,251	275	14,849	153	2	4,194	109,676	175,300

* See paras. 77 (c) and 79. † See paras. 31 (d) and 46 (c). ‡ See paras. 31 (d).

Add—

Naini Tal Division	Charcoal	7,130	maunds.
	Lime	1,544	ditto.
Ránikhet ditto	Firewood	118,559	ditto.
Jhánsi ditto	Firewood	1,734	ditto.
	Charcoal	614	ditto.
	Bamboos	8,800	in number.
	Kiras	3,948	ditto.
	Kurias	29,915	ditto.
Lalitpur ditto	Firewood	90	maunds.
	Bamboos	246,350	in number.
	Kurias	3,945	ditto.
Bánda ditto	Bamboos	7,059	ditto.
	Lime	1,170	maunds.

Total.

Firewood	120,383	maunds.	
Charcoal	7,744	ditto.	
Bamboos	262,209	in number.	
Kiras	3,948	ditto.	
Kurias	33,860	ditto.	
Lime	2,714	maunds.	

(*h*) *Timber removed from depôt by purchasers.*

Division.	Sál logs.	Sál karis.	Haldu karis.	Sein karis.	Chir karis.	Jamun karis.	Dhauri karis.	Kukat karis.	Haldu planks.	Chir planks.	Sál joras and ballis.	Sisham and kukat scantlings.	Boxwood pieces.	Ash pieces.	Miscellaneous ballis.	Total Number.	Total Cubic feet.
Naini Tal	...	...	...	...	3,429	...	...	...	...	17,152	...	...	...	...	...	20,581	16,385
Ránikhet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kumaun	114	12,245	201	3,644	...	826	49	...	252	...	265	...	...	...	...	17,596	33,038
Garhwál	...	...	...	15,373	...	...	...	...	...	...	...	...	...	...	...	15,373	27,393
Ganges	...	...	...	12,415	...	...	...	2,929	...	...	2	14,849	153	2	...	30,350	48,611
Jhánsi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	720	720	1,755
Lalitpur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	628	628	944
Bánda	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,590	2,590	4,567
Total ...	114	12,245	201	31,432	3,429	826	49	2,929	252	17,152	267	14,849	153	2	3,938	87,838	132,693

Add—

Naini Tal Division	Charcoal	7,075	maunds.
	Lime	977	ditto.
Ránikhet ditto	Firewood	115,655	ditto.
Jhánsi ditto	Firewood	2,112	ditto.
	Charcoal	420	ditto.
	Bamboos	6,869	in number.
	Kiras	3,913	ditto.
	Kurias	42,984	ditto.
Lalitpur ditto	Firewood	90	maunds.
	Bamboos	234,681	in number.
	Kurias	2,750	ditto.
Bánda ditto	Bamboos	625	ditto.
	Lime	946	maunds.

Total.

Firewood	117,857	maunds.	
Charcoal	7,495	ditto.	
Bamboos	242,175	in number.	
Kiras	3,913	ditto.	
Kurias	45,734	ditto.	
Lime	1,923	maunds.	

(*i*) *Timber removed "locally" by purchasers,* i. e., *timber prepared by Departmental Agency, but not brought to depôt, but sold from the forests.*

Division.	Chir scantlings.	Miscellaneous ballis.	Confiscated, drift and waif wood.	Total Number.	Total Cubic feet.	Remarks.
Naini Tal ...	13	...	...	13	3	
Kumaun ...	...	...	1,063	1,063	1,606	
Garhwál ...	...	...	811	811	3,549	
Ganges ...	...	...	1,301	1,301	2,848	
Lalitpur ...	...	547	...	547	840	
Bánda ...	...	19,308	...	19,308	37,586	
Total —	13	19,855	3,175	23,043	46,432	

Add—

Naini Tal Division	Firewood	33,681	maunds.
Kumaun ditto	Firewood	10	ditto.
	Bamboos	140	in number.
	Wooden ghi pots,	8	ditto.
	Mats	16	ditto.
	Hides	1	ditto.
Garhwál ditto	Firewood	80	maunds.
Ganges ditto	Bamboos	300	in number.
Lalitpur ditto	Bamboos	932,056	ditto.
	Kurias	267,647	ditto.
Bánda ditto	Firewood	21	maunds.
	Bamboos	44,142	in number.
	Hides	246	ditto.
	Lime	3,465	maunds.

Total.

Firewood	33,792	maunds.	
Bamboos	976,638	in number.	
Kurias	267,647	ditto.	
Wooden ghi pots,	8	ditto.	
Mats	16	ditto.	
Hides	247	ditto.	
Lime	3,465	maunds.	

(*j*). *Annual Timber Account.*

	Pieces.	Cubic feet.		Pieces.	Cubic feet.
Balance in hand at commencement of year.	25,805	59,001	Removed from depôts by purchasers.	87,838	132,693
Received from the forest during the year at depôts.	109,676	175,300	Sold locally ...	23,043	46,432
Local account ...	23,043	46,432	Used by the Department ...	1,520	1,137
Received by transfer from sale depôts.	1,228	2,240	Transferred to other sale depôts,	1,228	2,240
			Balance in hand at close of the year,	46,128	100,471
Total	159,752	282,973	Total ...	159,752	282,973

(*k*) The following statement shows the quantity of timber brought to depôt, the amount paid on account of it, and the quantity sold and amount realized during 1879-80, 1880-81, and 1881-82 :—

Year.	*Brought to depôt.*		*Sold.*		Remarks.
	Cubic feet.	Amount paid.	Cubic feet.	Amount realized.	
				Rs.	
1879-80	198,804	44,840	196,464	1,56,870	
1880-81	163,925	39,887	157,478	1,29,432	
1881-82	221,732	49,242	179,125	1,10,139	
Total ...	584,461	133,969	533,067	3,96,441	

showing an average cost of timber brought to depôt during the last three years of Rs. 23 per 100 cubic feet and average sales of Rs. 74 per 100 cubic feet.

SECTION 4.—FINANCIAL RESULTS.

16. The following statement shows the results of 1881-82 compared with the results of the two previous years:—

	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Receipts	3,67,601	4,57,606	5,04,037
Expenditure	2,32,234	2,62,437	3,04,893
Surplus ...	1,35,367	1,95,169	1,99,144
Percentage of expenditure to receipts ...	63·18	57 35	60·49

17. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amount.	Budget heads.	Amount.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forest by Government agency.	1,77,828	I.	1,49,834	$A\left(I.+V.+\frac{VI.}{2}+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B}{3}+$ Direction, Rs. 7,410.
II.—Other revenue ...	3,26,209	II., III., IV., & V.	64,647	$A\left(II.+III.+IV.+\frac{VII.}{3}+\frac{IX.}{3}\right)\frac{B.}{3}+$ Direction, Rs. 7,410.
III.—Formation, protection, and improvement of forests.	...	...	90,412	$A\left(\frac{VI.}{2}+\frac{VII.}{3}+VIII.+\frac{IX.}{3}\right)+\frac{B.}{3}+$ Direction, Rs. 7,413.
Total ...	5,04,037	...	3,04,893	

18. The following statement shows the receipts and expenditure in each division for 1881-82 compared with the corresponding figures of the previous year:—

Division.	Receipts.		Difference.		Expenditure.		Difference.	
	1880-81.	1881-82.	More.	Less.	1880-81.	1881-82.	More.	Less.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction ...	*Nil.*	*Nil.*	...	...	28,519	22,233	...	6,286
Naini Tal ...	35,782	33,283	...	2,499	43,682	38,164	...	5,518
Ránikhet ...	36,604	45,766	9,162	...	31,940	38,340	6,400	...
Kumaun ...	1,85,371	1,94,439	9,068	...	72,140	87,294	15,154	...
Garhwál ...	1,26,662	1,19,484	...	7,178	49,133	56,468	7,335	...
Ganges ...	61,356	82,668	21,312	...	29,951	39,726	9,775	...
Jhánsi ...	3,755	4,860	1,105	...	3,095	2,966	...	129
Lalitpur ...	8,076	11,006	2,930	...	3,977	4,728	751	...
Bánda ...	...	12,531	12,531	...	...	14,974	14,974	...
Total ...	4,57,606	5,04,037	56,108	9,677	2,62,437	3,04,893	54,389	11,933

19. The value of timber and fuel, &c., and live and dead stock at the—

	Rs.
Commencement of the year was	1,54,766
And at the close of the year	1,96,212
Balance in favour of the year	41,446
The outstandings due *to* the department at the close of the year amounted to ...	13,282
The outstandings due *by* the department at the close of the year amounted to ...	22,168
Balance against the year	8,886

20. The receipts of the year were Rs. 46,431 more than the receipts of 1880-81, and the surplus Rs. 3,975 more than the surplus of 1880-81.

The new division of Bánda added Rs. 12,531 to the receipts and Rs. 14,974 to the expenditure. Compared with 1880-81, there was a decrease of Rs. 19,236 under I., and an increase under II., III., IV., and V., of Rs. 65,667.

The decrease under I. is due to less timber having been sold from depôt in the Garhwál Division, on account of the new system of allowing the timber to be removed by purchasers instead of bringing it to the depôt by departmental agency (see para. 79).

The increase under the other heads is principally due to increases of about Rs. 23,000 in Kumaun and Garhwál for timber removed by purchasers, about Rs. 31,000 for khair pestles for sugar mills in those two divisions, and about Rs. 11,000 for bamboos in Ganges and Garhwál Divisions.

21. The redistribution of the old Garhwál, Bhagirathi, and Bijnor Divisions, noted in para. 31 of the annual report for 1879-80, has produced very satisfactory results, as will be seen from the following figures:—

	Rs.
Receipts from the Garhwál, Bhagirathi and Bijnor Divisions during 1878-79 ...	1,41,987
Ditto ditto and Ganges Divisions during 1879-80	1,57,325
Ditto ditto ditto during 1880-81	1,88,017
Ditto ditto ditto during 1881-82	2,02,153

The Garhwál and Ganges Divisions were formed out of the three old divisions on the 1st December, 1879.

CHAPTER II.

RESERVED, PROTECTED AND LEASED FORESTS UNDER CHARGE OF OFFICERS OF THE FOREST DEPARTMENT.

22. The Naini Tal Division forests are all "protected."

The Ránikhet Division forests are partly "reserved" and partly "protected."

The Kumaun and Garhwál Divisions forests are all "reserved."

The Ganges Division forests are partly "reserved" and partly "leased."

NAINI TAL DIVISION.

1.—AREA, BOUNDARIES, AND WORKING PLANS.

23. Area.—The forest survey maps have been printed, and the correct area of the division is 22,937 acres, 3,299 acres of which are village lands.

24. Boundaries.—The demarcation of the forests is completed.

25. Working Plans.—The Working Plan Division of the School Circle was engaged in the Naini Tal Division at the beginning and end of the year and was still at work when the year closed.

2.—PROTECTION AND IMPROVEMENT.

26. Establishments.—There was no change except the promotion of Mr. Braidwood, the officer in charge, from Assistant Conservator, 1st grade, to Officiating Deputy Conservator, 2nd grade.

27. Breaches of Forest Rules.—Fifteen cases, in which 22 persons were involved, were tried by the Deputy Conservator in his magisterial capacity. Convictions were obtained in 13 cases, including 17 persons.

1 case was for setting fire to the Hinnan forest.
2 cases were for exporting fuel without tickets.
2 ditto grazing without permission
7 ditto cutting trees ditto.
1 ditto cultivating land ditto.
1 ditto theft of fuel.
1 ditto escaping from arrest.

28. Roads.—The following new roads were made:—

	Rs.	a.	p.
From Ninglath gadh to Binaik khal, 2 miles 6¼ chains, breath 5 feet, cost ...	108	8	0
From Broughton hut to join Ninglath road, 46 chains, breadth 3 feet, cost ...	11	8	0
Repairing tools for above	5	10	0
Existing roads were repaired and widened at a cost of	310	14	6
Total spent on roads	436	8	6

29. Buildings.—The following new buildings were constructed:—

	Rs.	a.	p.
Wooden hut and out-houses in Hinnan forest	550	0	0
Lime-kilns	256	7	0
Lime store and chaukidar's room	174	0	0
Naini Tal Division share of latrine to Government out-houses	28	5	6
Maulani forest hut (incomplete)	891	0	0
Repairs of existing buildings	568	3	7
Total spent on buildings	2,468	0	1

30. Reproductive Measures.—A detailed account of the plantation work is given below; it cost Rs. 624-4-5 :—

China, Deopatha and Nairwari.
Planting 303 deodars from Ránikhet.
Ditto 300 walnuts ditto.
Ditto 1,120 ash from Badli.
Sowing 700 seed patches with walnuts.

Maulani—
Planting 3,233 walnuts from Ránikhet.
Ditto 1,560 ash from Badli.
Sowing 2,260 seed patches with Karsu (Quercus Semecarpifolia).

KILADHUNGI—

Planting 472 walnuts from Ránikhet.

BADLI—

Planting 6,500 ash, raised on the spot.

CHORSA—

Planting 497 walnuts from Ránikhet.

All the young plantations were weeded and cleared of overhanging brushwood and all new transplants were shaded.

The plantations at China (25 acres), Deopatha (25 acres), and Nairwari (27 acres) are now completely stocked and have this year been brought into Form No. 50.

These plantations consist of walnuts, horse-chestnuts, deodar, ash and oaks.

The Jabar plantation is this year shown as 147 acres instead of 140. This is due to a correct calculation of the area, not to any actual increase.

The deodars in this plantation are getting on very well. The tree which I measured on the 10th May, 1881, as 7 feet 9 inches high was 9 feet 4 inches on the 3rd June, 1882, and on that day I found two others 9 feet high and several 8 feet. This plantation is entirely deodar planted in oak coppice.

The Kahla plantation (35 acres) is also now completely stocked and has been brought on to Form No. 50. It consists of walnut and about 400 deodars.

The ash sowing of 1879-80 at Badli has done remarkably well, the seed patches are all well stocked, and a great many seedlings have been removed to other plantations. All the other plantations look promising. Walnut, ash, deodar, and oaks of three kinds are the trees which have succeeded best in the Naini Tal plantations. Horse-chestnuts do fairly well, but are slower in growth. Walnuts, deodars and horse-chestnuts do better as transplants than if sown *in situ*. Ash do equally well, whether sown or transplanted. Oaks do best sown *in situ*.

3.—YIELD AND WORKING.

31. The yield is shown in the following statements :—

(*a*) *Trees felled by Departmental Agency (selection fellings).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	516	22,067	Yielded 2,740 logs, of which 1,317 were sawn up, 8,390 cubic feet remaining in forest in log.
Do.	696	39,520	For fuel, in addition to 4,000 cubic feet from stumps and fallen wood.
Do.	160	9,800	For charcoal, in addition to 16,000 cubic feet from stumps and fallen wood.
Oak	71	7,800	For fuel, in addition to 5,300 cubic feet from stumps and fallen wood.
Do.	40	6,900	For charcoal.
Rhododendron	248	10,320	For fuel, in addition to 3,000 cubic feet from stumps and fallen wood.
Miscellaneous	90	2,880	For fuel, in addition to 1,830 cubic feet from stumps and fallen wood.
Ditto	32	1,150	For burning lime.
Total ...	1,853	100,237	

(*b*) *Removed free of charge by village right holders.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	34	1,000	For repair of houses, &c.
Chir poles	100	150	Ditto ditto.
Refuse chir slabs ...	514	514	Ditto ditto.
Oak	13	650	For agricultural implements.
Miscellaneous	6	80	For mill and utensils.
Poles of miscellaneous kinds,	3,578	3,122	For repair of villagers' houses and Government coolies' huts and for baggage poles.
Total ...	4,245	5,516	

(*c*) *Trees removed free of charge by the Executive Engineer of the Kumaun Provincial Works.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	38	1,520	For repairs to bridges, &c.
Oak	78	3,900	
Alder	10	500	
Miscellaneous	120	2,400	
Poles of miscellaneous kinds,	28	28	For coolies' huts.
Total ...	274	8,348	

(*d*) *Timber removed by purchasers.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir trees	3	48	Sold to Mr. Martin of Douglasdale for lime-burning, dead trees.
Poles of miscellaneous kinds ...	5,431	5,431	For cattle-sheds and huts.
Total ...	5,434	5,479	

(*e*) The following is a summary of the number of trees felled :—

Mature chir	1,444
Dead chir	3
Poles of chir	100
Mature oak	202
„ rhododendron	248
„ alder	10
„ miscellaneous	248
Poles of miscellaneous kinds	9,037
Total ...	11,292

Of these 2,238 trees were cut in village lands.

(*f*) *Yield in material.*—The following statement shows the yield in material and amounts realized during 1881-82 compared with the results of 1880-81 :—

Material.	1880-81.		1881-82.		*Difference.*	
	Quantity.	Amount realized.	Quantity.	Amount realized.	Quantity.	Amount realized.
	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.
Timber of all kinds	19,212	10,815	21,864	10,770	+2,652	−45
Firewood and charcoal	Maunds 43,616	22,732	Maunds 40,756	19,833	−2,860	−2,899
Wood tickets	Tickets 3,453	1,738	Tickets 2,772	1,395	−681	−343
Grazing dues	Animals 957	136	Animals 1,166	223	+209	+87
Miscellaneous	Not known	361	Not known	1,062	...	+701
Total ...	...	35,782	...	33,283	...	−2,499

Less charcoal and fewer wood tickets were sold during 1881-82 owing to there having been fewer visitors and to charcoal having been supplied by the municipality and by private dealers. The increase of "miscellaneous" is due to an increase of nearly Rs. 700 from sales of lime and limestone.

4.—FINANCIAL RESULTS.

32. The following statement shows the results of 1881-82 compared with the results of the two previous years:—

	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Receipts	21,426	35,782	33,283
Expenditure	21,005	43,682	38,164
Surplus	421	...	...
Deficit	...	7,900	4,881
Percentage of expenditure to receipts	98·0	122·0	114·6

33. Detail of revenue:—

Description.	Amount.	Total.
	Rs. a. p.	Rs. a. p.
I*a*.—17,152 chir planks and 3,429 chir beams	10,503 13 9	
I*b*.— 839¼ maunds chir charcoal	839 4 0	
6,120¼ maunds hard-wood charcoal	6,120 4 0	
75 maunds small hard-wood charcoal	64 14 0	
40½ maunds unburnt and dust charcoal...	10 2 0	
33,681 maunds firewood to Commissariat Department ...	12,798 11 11	
I*c*.— 977½ maunds lime	681 10 0	31,018 11 8
II*a*.—Wood for 73 squatters' huts	265 8 0	
II*b*.—2,772 wood tickets	1,386 0 0	
Royalty on firewood...	4 6 6	
Walking-stick contract	5 0 0	
II*c*.—Royalty on 201 loads of ringals	25 2 0	
II*d*.—Grazing dues	223 3 9	
II*e*.—Royalty on lime	96 4 0	2,005 8 3
V*a*.—Fines	206 11 0	
V*b*.—Refund of amount overpaid on account of carriage of timber ...	37 0 10	
V*c*.—Sale of a confiscated crop of grain	15 0 0	258 11 10
Total revenue	...	33,282 15 9

34. Compared with 1880-81 there is—

	Rs.
A decrease under I. of	2,143
Ditto II. of	433
An increase III. and V. of	77

The decrease under I. is due to less sales of charcoal, charcoal having been sold by the municipality and by private contractors. The decrease under II. is principally due to less wood tickets having been sold, many houses being unoccupied.

35. The value of stock at the—

	Rs.
Commencement of the year was	24,831
And at the close of the year	25,128

The outstandings at the close of the year were:—

	Rs.
On account of contractors	760
Ditto revenue	351

A sum of Rs. 64-10-8, due to one Ishru, fuel contractor, was written off under sanction of Government Order No. 408, dated 25th May, 1881.

36. The following statement shows the receipts and expenditure of the year under the three main budget headings:—

Headings.	Receipts.		Charges.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	31,019	I.	30,602	$A\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 500.
II.—Other revenue ...	2,264	II. III. IV. & V.	3,954	$A\left(II+III+IV+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 500.
III.—Formation, protection, and improvement of forests.	...	...	5,108	$A\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 500.
Total ...	33,283	...	39,664	

37. The results of the working of this division for the three years 1879-80 to 1881-82, if calculated on the actual receipts and expenditure, show a deficit of Rs. 12,159, but if calculated according to the following summary a clear profit is shown of Rs. 12,724.

Previous to 1879-80 trees were sold standing in the forests and charcoal was made and removed by purchasers, there were no departmental timber or charcoal operations. During 1879-80 the department took the supply of these articles into its own hands, and, during that and the following year, formed depôts, built large timber and charcoal-sheds and laid in large stores of timber and charcoal :—

Summary from 1879-80 to 1881-82.

		Rs.
Receipts		90,491
Expenditure, less Bánda Rs. 200		1,02,650
	Deficit	12,159
Value of timber at commencement of 1879-80		*Nil.*
Ditto close of 1881-82		10,324
	Deficit	1,835
Value of live and dead stock at commencement of 1879-80 ... ... Rs. 1,032		...
Ditto ditto close of 1881-82 ... ... „ 14,804		13,772
	Surplus	11,937
Outstandings at commencement of 1879-80 ... ... Rs. 98		...
Ditto close of 1881-82 ... ... „ 760		662
	Surplus	12,599
Due on transactions of 1881-82 not yet paid		513
	Surplus	12,086
Revenue outstanding at close of 1881-82		351
Due from Kumaun and Garhwál Divisions		287
	Net surplus of three years	12,724

RANIKHET DIVISION.

1.—AREA, BOUNDARIES, AND WORKING PLANS.

38. AREA.—There has been no change.

39. BOUNDARIES.—All the boundaries have been demarcated. A revised list of village lands within the protected forests, and a revised description of the outer boundaries of the forests, have been prepared and sent to the Superintendent of Forest Surveys to be checked before being submitted to Government. Rs. 46-9-6 was spent on demarcation work.

40. WORKING PLANS.—The Working Plan Division has been employed in valuing the protected forests of Seoni, Kathalekh, Ganiadeoli, Padholi, Dwarson and Chaubattia, and in examining the reserved forest in accordance with Inspector-General's suggestions.

2.—PROTECTION AND IMPROVEMENT.

41. ESTABLISHMENTS.—There has been no change.

42. BREACHES OF FOREST RULES.—There were 49 cases in which 127 persons were involved. Convictions were obtained in 46 cases, including 117 persons; 11 of these cases were tried by the Cantonment Magistrate, and 38 petty cases, for stealing a load of grass or firewood and such like, were disposed of by the Divisional Officer.

43. ROADS AND FENCES.—Ten miles and 45 chains of roads were repaired at a cost of Rs. 101, and 4 miles 57 chains of fences for Rs. 109.

44. REPRODUCTIVE MEASURES.—Mr. Craw's report on nursery and plantation work here follows :—

The several kinds and quantities of seeds sown during the year are as follows :—

Wild pear	...	...	...	...	...	344	lb.
Ash	...	...	...	...	...	62	"
Chir	...	...	...	...	...	48	"
Peach	...	...	...	...	...	14	"
Acacia	...	...	...	...	...	18½	"
Eucalyptus	...	...	...	...	...	18	packets

The wild pear seed has vegetated very freely, and there should now, with those raised last year, be enough plants for the hedge round the reserved forests. The ash seed is just coming up and promises a good crop of seedlings. The chir seed was sown broadcast in the forests under Jakhdeo, and, where it met with a good grassy covering, has done well; but in bare, rocky places only a few plants are visible. More seed has been collected, and will be sown on the bare places when the rains set in. With the exception of three kinds, *viz.*, rostrata, rostoma, and hemiphloiæ, all the eighteen kinds of gums vegetated; some of the packets however produced only a very few plants, which, notwithstanding they were carefully protected during winter, do not look strong.

Sowings of 500 patches at a time of acacias were made at Dalmoti, the 22nd June, 6th July, 23rd November and 6th March. Two small beds were also sown the 5th July for plants for pots; all the seed was quite fresh and good.

The sowings made in June and July germinated very well, but the plants from the June sowing have stood better than those from the July one; soon after the rains ceased each sowing was covered with grass to retain moisture and protect the seedlings from frost; yet notwithstanding this precaution a good many of the smallest and weakest plants of each sowing have died. The sowing made in November is only now appearing above ground, as is also that made in March; and the latter appears to be doing the best of the two. When the plants raised in the two small beds were a couple of inches high, they were transferred to 1,200 flower-pots, 4 and 5 plants into each, and the pots sunk in the ground to keep them moist. At the end of the rains a chapper was placed over them to ward off strong sunshine and also for protection against frost. Water was also given when required all through winter and spring.

These plants have done remarkably well; many are now upwards of 20 inches high and strong. The grass chapper has been removed to inure the plants to strong sunshine, and when the rains set in they will be planted out, care being taken to disturb the bolls as little as possible.

Three thousand and sixteen alders were planted in the marshy ground at Dalmoti during the rains, but have not succeeded at all well. They were brought from the neighbouring ravines and were rather large plants with only a few long straggling roots. I think it will be better to prepare plants in the nursery to taking up others from the forests to make good the vacancies.

Eighty-nine sweet chestnuts were planted at Kilkhet during the cold weather and have done very well.

The *Pithecolobium saman* plants referred to in my report last year have all died. The plant evidently is too tender to stand the hills.

The following is a list of the forest and fruit trees distributed during the year :—

1st.—Forest trees.

To whom.	Gums.	Deodars.	Walnut.	Horse chestnuts.	Willow.	Miscellaneous.	Total.
Cantonment Magistrate, Ranikhet ...	2,100	...	2,000	2,000	800	...	6,900
Forest Department, Naini Tal ...	...	300	4,500	...	...	...	4,800
Householders and villagers ...	90	276	466	322	100	128	1,382
	2,190	576	6,966	2,322	900	128	13,082

2nd.—Fruit trees.

To householders and villagers and others.	Apple ...	... 1,823	Fig ...	... 236			
	Pear ...	... 1,145	Quince ...	... 169			
	Apricot ...	... 945	Mulberry ...	... 51			
	Plum ...	... 570	Loquat ...	... 48			
	Cherry ...	... 495	Currant ...	... 36			
	Peach ...	... 487	Chestnut ...	... 73			
							6,078
							19,160

Of these 104 apricots were sent to Simla for the municipality gardens, and 550 apples and 67 sweet chestnuts to Sir Henry Ramsay for the Peura orchards.

There were in addition sold 8 apples, 14 apricots, 18 pears and 24 plums, in all 64 trees, for Rs. 61.

The fruit was sold to Messrs. Rustomjee and Co., Ranikhet, for Rs. 550.

There is promise of a good crop of apples and apricots this year, with a few cherries and plums, but not many pears. The drought has been against the cherry and plum blossom setting well.

The stock of forest and fruit trees in the nursery is as under :—

1st.—Forest trees.

Walnut	...	...	...	... 58,437	
Deodar	...	...	...	... 90,500	
Horse chestnut	...	...	...	... 17,490	
Oak	...	...	...	... 1,207	
Pinus excelsa	...	...	...	... 30,510	
Ash	...	...	...	... 4,824	
Cypress	...	...	...	... 8,767	
Willow	...	...	...	... 2,374	
Gum	...	...	...	... 4,918	
Wild pear	...	...	...	... 1,44,731	
Miscellaneous	...	...	...	... 1,082	
					3,65,296

2nd.—Fruit trees.

Apple, grafted	2,361	
Ditto, stock	9,608	
Pear, grafted	9,104	
Ditto, stock	5,188	
Apricot, budded	631	
Ditto, stock	45,988	
Cherry, budded	794	
Ditto, stock	2,255	
Plum, budded	1,805	
Ditto, stock	2,232	
Peach, budded	8,911	
Ditto, stock	5,463	
Loquat, enarched	85	
Ditto, stock	72	
Quince	351	
Fig	745	
Mulberry	225	
Currants	211	
		20,100
Fruit trees		96,029
Forest trees		3,65,296
Total		4,61,325

Whenever the malis on the nursery have been at liberty from sowing and transplanting, they have been employed on terracing the steep portions of the nursery to prevent wash; nearly all the ground occupied by the old apricot and apple trees is now terraced.

45. The Australian acacias grow very rapidly and seem to do remarkably well in the warm parts of the reserved forest when once established, but we find great difficulty with them during the first year or two. The Conservator of Madras was asked for his advice, but we had already tried all his methods.

The seed germinates freely, and if sown in a well-prepared nursery where the young plants can be carefully attended to they grow very well, but when transplanted in the forests a large proportion die. During the past year we tried sowing *in situ* at four different seasons, *viz.*, June, July, November and March, as noted in Mr. Craw's report. It is too early yet to judge of the success of these sowings, but Mr. Craw says that a good many of the smallest and weakest plants of the June and July sowings have died. The seedlings which were pricked out into flower-pots when about 2 inches high, 4 or 5 into each pot, have done remarkably well, and as they can be transplanted without breaking a single root, I think that system ought to answer even if all others fail. Gums and *Pithecolobium saman* have now been fully tried at Ranikhet and proved to be unsuited to that climate, and it is useless sending more seed of those kinds.

3.—YIELD AND WORKING.

46. This is shown in the following statements :—

(*a*) *Trees felled by Departmental Agency (selection fellings).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	565	47,477	For Commissariat fuel.
Chir poles	1,168	7,627	Used in repairing fences.
Oak	136	6,218	For Commissariat fuel.
Miscellaneous	214	5,240	Ditto.
Total ...	2,083	66,562	

(*b*) *Removed free of charge by village right-holders.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	442	26,520	For building, agricultural implements, &c.
Chir poles	4,177	25,662	
Oak	695	2,780	
Miscellaneous	52	208	
Total ...	5,366	55,170	

(*c*) *Timber removed by purchasers.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Chir	250	14,736	Sold to private individuals.
Total ...	250	14,736	

Four chir trees containing 216 cubic feet were also given, free of charge, to the Executive Engineer, Kumaun Provincial Works, for repairs to bridges.

(*d*) The following is a summary of the number of trees felled :—

Mature chir	1,113
Chir poles	5,493
Oak	831
Miscellaneous	266
Total ...	7,703

(*e*) *Yield in material.*—The following statement shows the yield in material and amounts realized during 1881-82, compared with the results of 1880-81 :—

Material.	1880-81.		1881-82.		*Difference.*	
	Quantity.	Amount realized.	Quantity.	Amount realized.	Quantity.	Amount realized.
	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.
Timber of all kinds ...	53,490 chir and 265 charpoys.	3,952	14,736 and 198 charpoys.	1,067	−38,754 and 67 charpoys.	−2,885
Firewood and charcoal,	91,466 maunds,	31,390	1,15,755 mds....	42,512	+24,289 mds....	+11,122
Grazing and grass ...	Not known ...	500	Not known ...	701	...	+201
Miscellaneous ...	Ditto ...	762	Ditto ...	1,486	...	+724
Total ...	...	36,604	...	45,766	...	+9,162

47. There are no departmental timber operations in this division: the trees are sold standing and all the timber is used locally. Owing to the Military Prison works having been stopped, less chir trees were purchased by the Public Works Department; also less trees were purchased by private individuals than during the previous year. The increase of firewood and charcoal is due to the Commissariat Department having required more firewood, but as a large proportion of the fuel was obtained from fallen wood in the Seoni forest, less trees were felled for fuel than during 1880-81.

4.—FINANCIAL RESULTS.

48. The following statement shows the results of 1881-82 compared with the results of the two previous years :—

	1879-80.	1880-81.	1881-82.
Receipts	7,165	36,604	45,766
Expenditure	17,357	31,940	38,340
Surplus	...	4,664	7,426
Deficit	10,192	...	...
Percentage of expenditure to receipts	242·2	87·2	83·7

49. Detail of revenue :—

Description.	Amount.			Total.		
	Rs.	a.	p.	Rs.	a.	p.
I. *b*.—1,15,655 maunds of firewood to Commissariat Department ...	42,214	0	1	42,214	0	1
II. *a*.—303 chir trees to private purchasers	1,055	0	0			
Royalty on 198 charpoys	12	6	0			
II. *b*.—Royalty on 100 maunds firewood to brewery	9	6	0			
Huts and firewood for 2,237 squatters...	288	4	0			
II. *d*.—Grazing and fodder grass	701	4	0			
II. *e*.—Royalty on 64 gharras chir tar	8	0	0			
Ditto 10 stone quarries	5	0	0			
Ditto 1,075 flagstones	5	6	0			
Sale of orchard fruits	1,205	14	0	3,290	8	0
V. *a*.—Fines	114	2	0			
V. *c*.—Other sources	147	3	6	261	5	6
Total revenue ...	...			45,765	13	7

50. Compared with 1880-81 there is—

	Rs.
An increase under I. of	11,194
A decrease under II. of	2,132
An increase under V. of	100

The increase under I. is due to a larger amount of firewood having been used by the Commissariat Department, and to the rate having been raised from Rs. 34 to Rs. 38 per 100 maunds on account of extra expense of carriage from more distant forests. The decrease under II. is principally due to fewer timber trees having been sold.

51. The value of stock at the commencement—

	Rs.
Of the year was	6,787
And at the close of the year	8,765

The outstandings at the close of the year were :—

	Rs.	a.	p.
On account of revenue	0	4	0

The liabilities amounted to Rs. 3,722, which sum was due to the fuel contractor for March, 1882, and was paid in the following April.

52. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	42,214	I.	27,358	$A.(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}+$ Direction, Rs. 533.
II.—Other revenue ...	3,552	II. III. IV. & V.	4,498	$A.(II+III+IV+\frac{VII}{3}+\frac{IX}{3})+\frac{B}{3}+$ Direction, Rs. 533.
III.—Formation, protection, and improvement of forests.	...	...	8,084	$A.(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3})+\frac{B}{3}+$ Direction, Rs. 534.
Total ...	45,766	...	39,940	

KUMAUN DIVISION.

1.—AREA, BOUNDARIES AND WORKING PLANS.

53. *Area.*—There was no change.

54. *Boundaries.*—Rs. 997 were spent on demarcation work during the year, and the Deputy Conservator reports that all boundaries are now completely demarcated. The details of work done are given in para. 6 (*b*).

55. WORKING PLANS.—The Working Plan Division of the School Circle was employed in valuing the sál forests of the Nindhore valley during the cold season.

2.—PROTECTION AND IMPROVEMENT.

56. ESTABLISHMENTS.—There was no change, except that Major Campbell went on furlough on the 27th of June, 1881, and Mr. O'Callaghan, Deputy Conservator, 1st grade (transferred from the School Circle), took charge of the division on that date and held charge during the remainder of the year.

57. BREACHES OF FOREST RULES.—There were 192 cases, including 386 persons. Convictions were obtained in 188 cases, including 358 persons. Only four of these cases were sufficiently important to warrant trial by a Magistrate ; most of the others were petty cases which probably (see last clause of para. 9) ought not to have been entered in Form No. 52.

58. ROADS AND BRIDGES.—The new road, mentioned in para. 57 of last year's report, along the southern limit of the division between the Chorgalia-Sitarganj road and the Barmdeo-Pilibhit road, was continued; 2 miles 18 feet in breadth were constructed, at a cost of Rs. 40, from Rinsali to the Chorgalia-Sitarganj road.

A road was made on both sides of the Chinal bridge, 1 mile 24 chains in length and 18 feet broad; it cost Rs. 2,203.

A report on the Chinal bridge was submitted with this office letter No. 161, dated 1st March, 1882. The bridge is 92 feet above the bed of the ravine, 80 feet span, 13 feet breadth of roadway clear of handrails, and it has a camber of 9 inches in the centre. The bridge is formed by 10 beams 50′ × 10″ × 12″ placed on edge with plain scarf joints 4 feet long in the centre. Over these are scantlings 16′ × 6″ × 5″ notched over the beams at right angles, and over these are planks 3 inches thick. The planking is thickly coal-tarred and sanded. The bridge is supported by 10 struts 30′ × 10″ × 10″ mortised into wooden foot-plates, resting on pucka masonry ledges, with five straining beams 26½′ × 10″ × 10,″ butt jointed to the struts and secured by iron angle straps, bolts and spikes. The struts are horizontally and cross-braced by scantlings 5″ × 3″ and 6″ × 5″. The whole of the timber is of sound sál well painted with coal tar. Rs. 1,469 have been spent on this bridge: Rs. 603 in 1880-81 and Rs. 866 in 1881-82.

					Rs.
241¼ miles of existing cart roads were repaired, costing			...	...	5,629
76½	ditto	ditto bridle ditto, ditto	...	...	1,405
173¼	ditto	ditto foot and fire-line paths ditto, ditto	...	...	712
15¼	ditto	ditto fences ditto, ditto	...	...	672

59. BUILDINGS.—An upper story with two rooms was built on to the Mohan house and the thatched roof was replaced by an iron roof. This work cost Rs. 1,201.

Rs. 424 were spent on repairs of existing buildings.

60. REPRODUCTIVE MEASURES.—There were no fresh sowings during the year.

The tun seedlings at Dungalgarh are growing well. It was a trying year for the young sál at Chopra, owing to the total absence of cold-weather rain. I saw the plantation in February and again at the end of April. In some places a great many of the seedlings have died, but over a large area I think there are sufficient alive to stock the ground.

Water is brought into the plantation at the upper end, and as far as it reaches there is a very marked difference in the condition of the young trees ; they are twice the size of the others and look far more vigorous. If the water was properly husbanded there would be enough to irrigate 20 acres or more of ground, and we intend to bring it from the stream in rough wooden troughs and systematically plant up the whole of the plateau. Sowing sál without irrigation on dry plateaus where there is no shade is very uncertain: its success or failure depends entirely on the rainfall.

The mulberries at Ramnagar, Chopra, Laiti, and Chorgalia are flourishing. Several months ago I wrote to the Department of Agriculture and Commerce, asking if plantations were to be formed for sericulture, but have received no reply.

The following trees are alive in the Ramnagar garden, none having died during the year :—

Swietenia mahogani	10
Sterculia tricosiphon	10
Rhus Thunberji	15
Catalpha bignonioides	7

Plantation work cost Rs. 488 during the year.

61. CUTTING OF CREEPERS.—6,954 creepers were cut by forest guards.

3.—YIELD AND WORKING.

62. The yield is shown in the following statements :—

(a) *Trees felled by departmental agency (selection fellings).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	2,245	46,103	Converted into logs and scantlings.
Sain ...	803	16,719	Ditto scantlings.
Jamun ...	81	1,650	Ditto ditto.
Haldu ...	119	2,362	Ditto logs and scantlings.
Total ...	3,248	66,824	

(b) *Trees felled by departmental agency (clearances).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	8	281	Cut on fire-lines in the Chilkia block.
Dhaura ...	1	3	
Total ...	9	284	

(c) *Removed free of charge by village right-holders, His Highness the Nawab of Rampur, and given to the Commissioner of Kumaun and the Executive Engineer, Kumaun Provincial Works, for the Kosi dam and repairs to bridges.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
	Trees.		
Sál ...	200	13,480	Given to His Highness the Nawab of Rampur.
Sisham ...	37	296	Given to Commissioner of Kumaun for Kosi dam.
Khair ...	834	1,668	Ditto ditto ditto.
Sál ...	4	188	Given to Executive Engineer, Kumaun Provincial Works.
Tun ...	2	202	Given to village right-holders.
Sál ...	421	5,273	Ditto ditto.
Miscellaneous trees ...	13,735	27,470	Given to Commissioner for Kosi dam.
Ditto ...	4	160	Given to right-holders.
	Pieces		
Sisham ...	2,562	10,461	Ditto.
Khair ...	1,806	3,055	
Miscellaneous ...	169	335	
	Scores		
Bamboos ...	682	...	
Total ...	Trees 15,237 Pieces 4,537 Scores 682	62,588	

(*d*) *Timber removed by purchasers.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	Not known	110,112	Fallen or dry timber removed from the forests by purchasers. The "khair" is from green trees, but no record can be kept of the number cut. Some of the sal was from hollow and crooked trees which were allowed to be felled.
Sain ...	Do.	505	
Sisham ...	Do.	37,038	
Sandan ...	Do.	602	
Tun ...	Do.	2,373	
Khair ...	Do.	85,195	
Haldu ...	Do.	64,937	
Jamun ...	Do.	476	
Total ...	...	301,238	

(*e*) The following is a summary of the number of trees felled :—

Sál ...	2,880
Sain ...	803
Sisham...	37
Tun ...	2
Khair ...	834
Haldu ...	119
Jamun	81
Dhaura	1
Poles of miscellaneous kinds	13,739
Total	18,496

(*f*) YIELD IN MATERIAL.—The following statement shows the yield in material and amounts realized during 1881-82 compared with the results of 1880-81 :—

Material.	1880-81.		1881-82.		*Difference.*	
	Quantity.	Amount realized.	Quantity.	Amount realized.	Quantity.	Amount realized.
	Cubic feet.	Rs.	Cubic feet.	Rs.		Rs.
Timber of all kinds ...	214,615	1,40,292	334,276	1,51,785	...	+11,493
	mds.		mds.			
Firewood and charcoal ...	46,291	5,786	46,328	5,791	...	+5
Bamboos ...	2,344,003	11,291	220,960	11,291	...	...
Grazing and fodder grass ...	No details,	10,266	No details,	8,689	...	—1,577
Other minor produce ...	Do. ...	16,632	Do. ...	15,794	...	—838
Miscellaneous ...	Do. ...	1,104	Do. ...	1,089	...	—15
Total ...	...	1,85,371	...	1,94,439	...	+9,068

Less timber (Rs. 25,488 worth) was sold from depôt, but more (Rs. 36,981 worth) was removed from the forests by purchasers.

The variations under the other heads are too small to require notice.

4.—FINANCIAL RESULTS.

63. The following statement shows the results of 1881-82 compared with the results of the two previous years :—

	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Receipts ...	1,65,574	1,85,371	1,94,439
Expenditure ...	73,649	72,140	87,294
Surplus ...	91,925	1,13,231	1,07,145
Percentage of expenditure to receipts ...	44·4	38·9	44·8

64. DETAIL OF REVENUE :—

Description.	Amount.			Total.		
	Rs.	a.	p.	Rs.	a.	p.
I a.—Sál logs	9,161	4	9			
Sál karis	27,969	12	9			
Sál joras	1,353	9	8			
Sain karis	4,197	6	10			
Jamun karis	877	13	0			
Haldu karis and planks	280	8	2			
Dhaura karis	44	9	3			
Advanced for timber not yet supplied	5,926	7	7			
				49,811	8	0
II.a.—Sál removed by purchasers	55,098	5	8			
Sisham ditto	1,389	6	4			
Sandan ditto	225	12	7			
Tun ditto	889	15	2			
Jamun ditto	119	2	0			
Sain	126	4	7			
Haldu	12,175	11	3			
Khair	31,948	5	5			
II.b.—Firewood and charcoal removed by purchasers	5,790	15	2			
II.c.—Bamboos ditto	11,291	6	11			
II.d.—Grazing and fodder grass ditto	8,689	7	1			
II.e.—Other minor produce ditto	15,793	10	4			
				1,43,538	6	6
III.—Confiscated, drift and waif wood	367	4	9			
				367	4	9
V.a.—Fines and forfeitures	630	0	10			
V.c.—Other sources	91	5	10			
				721	6	8
Total Revenue, B. ...	...			1,94,438	9	11

65. Compared with 1880-81 there is :—

	Rs.
A decrease under I. of	25,488
An increase under II. of	34,570
A decrease under III. and V. of	15

The decrease under I. is due to less timber having been sold from depôt. Very good prices were obtained.

The sources from which the increase under II. were obtained is shown in the following statement :—

Material.	Amount realised.		Difference.	
	1880-81.	1881-82.	More.	Less.
	Rs.	Rs.	Rs.	Rs.
Sál removed by purchasers	46,134	55,098	8,964	...
Sisham	1,960	1,389	...	571
Sandan ditto	284	226	...	58
Tun ditto	273	890	617	...
Jamun ditto	689	119	...	570
Sain	620	126	...	494
Haldu	4,813	12,176	7,363	...
Khair	10,220	31,949	21,729	...
Firewood and charcoal	5,786	5,791	5	...
Bamboos	11,291	11,291	...	...
Grazing and fodder grass	10,266	8,689	...	1,577
Other minor produce	16,632	15,794	...	838
Total ...	1,08,968	1,43,538	38,678	4,108

66. There was a good demand for sál and haldu timber, and the demand for khair chúrans for sugar-mill trestles was enormous, owing, I imagine, to the splendid crop of sugarcane in 1881-82.

67. The value of depôt stock at the commencement of the year was Rs. 40,882 and at the close of the year Rs. 66,423.

The outstandings at the close of the year were :—

	Rs.
Due from contractors	725
Due from disbursers	3,515
Due to purchasers	5,926

This last sum is an advance made for timber which at the close of the year had not been supplied.

68. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Heading.	Receipts.		Charges.	
	Amount.	Budget head.	Amount.	Budget head.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	49,812	I.	38,617	$A\left(I.+V.+\frac{VI.}{2}+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B.}{3}+$ Direction Rs. 3,144.
II.—Other revenue ...	1,44,627	II., III., IV. & V.	26,817	$A\left(II.+III.+IV.+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B.}{3}+$ Direction, Rs. 3,144.
III.—Formation, protection, and improvement of forests.	...	...	31,293	$A\left(\frac{VI.}{2}+\frac{VII.}{3}+VIII.+\frac{IX}{3}\right)+\frac{B.}{3}+$ Direction, Rs. 3,145.
Total ...	1,94,439	...	96,727	

GARHWAL DIVISION.

1.—AREA AND BOUNDARIES.

69. AREA.—There was no change.

70. BOUNDARIES.—The replacement of kutcha pillars by pucka ones along the outer boundaries was nearly finished at the close of the year.

The demarcation of village lands within the forests was completed except one plot.

The demarcation of the boundaries of the portions of forests open to the exercise of recorded rights was completed, but a few of the pillars required numbering. The cost of demarcation work during the year was Rs. 900.

2.—PROTECTION AND IMPROVEMENT.

71. ESTABLISHMENTS.—There was no change.

72. BREACHES OF FOREST RULES.—There were 47 cases, including 74 persons. One case was tried by a Magistrate; the remainder were petty cases for non-delivery or loss of passes, &c., and were disposed of by the Divisional Officer.

73. ROADS AND BRIDGES.—The floods of 1880 entirely carried away the old road in the Palain valley, and a new road, 12 feet broad and well above high-water level, is being made. The total length of this road will be about 16 miles. Some six miles or more of the most difficult part of it are completed. Rs. 3,750 were spent on it during 1881-82.

A new bridle road, 6 feet broad and 6 miles 65 chains in length, was made from Boxar to Kalagarh along the left bank of the Ramganga. It cost Rs. 335.

Four new roads were made for export of timber as follows:—

Gonjera Sot road.—Breadth 12 feet, length 5 miles and 40 chains; cost Rs. 370.

Goli Rewarh road.—Breadth 12 feet, length 1 mile and 74 chains; cost Rs. 1,084.

Chota Phulia Sot road.—Breadth 12 feet, length 2 miles and 72 chains; cost Rs. 186.

Delidunga Sot road.—Breadth 6 feet, length 1 mile and 62 chains, cost Rs. 284.

This will be made into a cart road 12 feet broad next season.

The temporary bridge over the Ramganga at Boxar was built at a cost of Rs. 236: 136 miles of existing cart roads were repaired at a cost of Rs. 5,568.

68 miles of bridle roads Rs. 969 ;

159 miles of fire-line and foot paths, Rs. 658.

74. BUILDINGS—A 1st class house at Dikala is in course of construction. Rs. 1,786 were spent on it during 1881-82, and Rs. 328 were spent on collecting materials during the previous year.

Rs. 189 was spent on repairs of existing buildings.

75. Rs. 44 were spent on cutting creepers in the south Patli Dun range between Lidpani and Pacheri.

76. For some time past we have been endeavouring to get the fair which used to be held at Dharon removed to Kalagarh, and at last this has been accomplished. The Dharon fair was a constant source of anxiety to us, for the road by which the swarms of hill-men went to it ran through the very heart of our fire-protected forests of the south Patli Dun range. The fair is now thoroughly established at Kalagarh, which is a more suitable place for it in every respect, and the hill-men go to it by our new road along the left bank of the Ramganga, which is well outside all the fire-conserved forests. It is a pleasanter road for the people too—plenty of water and shade, and much cooler than the other road in the hot weather.

3.—YIELD AND WORKING.

77. The yield is shown in the following statements :—

(a) *Trees felled by departmental agency (selection fellings).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál	287	6,796	Cut in division I., compartment 18 ; 5,287 cubic feet converted into scantlings for depôt, 1,509 cubic feet for Dikala house.
Sain	2,002	20,594	Converted into scantlings to complete Meerut merchant's indents.
Total ...	2,289	27,390	

(b) *Trees given free to village right-holders.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál	3	120	Given to villagers of Dharon, Jhirna and Kothirao for domestic purposes.
Sisham	2	40	
Sandan	2	30	
Total ...	7	190	

(c) *Timber removed by purchasers.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál	1,855	46,443	Trees felled according to working plan.
Sál	...	39,261	Dry and fallen trees.
Sain	36	3,783	36 trees felled ; remainder from dry and fallen trees.
Sisham	...	1,005	Dry and fallen trees
Sandan	Not known,	6,837	Chiefly from green trees allowed to be felled.
Tún	...	975	Dry and fallen trees.
Khair	Not known,	31,417	From trees allowed to be felled.
Miscellaneous ...	Do. ...	17,643	Chiefly from fallen trees in water-courses and on fire-lines.
Total ...	...	147,364	

(*d*) The following is a summary of the number of trees felled :—

Sál	2,145
Sain	2,038
Sisham	2
Sandan	2
Total ...	4,187

(*e*) YIELD IN MATERIAL.—The following statement shows the yield in material and amounts realized in 1881-82 compared with the results of 1880-81 :—

Material.	1880-81.		1881-82.		*Difference.*	
	Quantity.	Amount realized.	Quantity.	Amount realized.	Quantity.	Amount realized.
	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.
Timber of all kinds	149,005	84,474	174,757	81,382	+25,752	−3,092
	Mds.		Mds.			
Firewood	25,639*	5,509*	43,920	913	...	−4,596
Bamboos	7,642,737	25,512	8,045,307	27,034	+402,570	+1,522
Grazing and fodder grass	Various.	2,395	Various.	2,398	...	+3
Other minor produce	...	7,813	...	6,303	...	−1,510
Miscellaneous	...	959	...	1,454	...	+495
Total ...	...	1,26,662	...	1,19,484	...	−7,178

* These 25,639 mds. of firewood realized Rs. 509; the balance of revenue, Rs. 5,000, was the rent paid by the Superintendent, Roorkee Workshops, for the lease of the Chandi forests, the outturn of firewood from which is not known.

78. Less timber (Rs. 24,100 worth) was sold from depôt, but more (Rs. 21,008) was removed from the forest by purchasers.

The large amount of firewood exported in 1880-81 was due to the exceptionally large quantity of trees knocked down by the floods of September, 1880.

The differences under other heads are trifling.

79. The experiment, mentioned in para. 81 of last year's report, of selling trees standing, instead of sawing them up departmentally and bringing the timber to depôt, was so successful that it was carried out on a much more extensive scale during 1881-82.

Over 3,000 sál trees were marked in divisions I. and II. of the north Patli Dún range, and 1,855 of them were felled by exporters (see the following statement):—

Division.	Compartment.	Number of sál trees felled.	*Class and girth of trees.*				Hollow trees.
			I. Over 6 feet girth.	II. 4½ to 6 feet girth.	III. 3 to 4½ feet girth.	IV. 1½ to 3 feet girth.	
I. ...	17	1,184	561	439	174	...	10
I. ...	15	205	106	40	49	6	4
II. ...	13	208	78	86	34	...	10
II. ...	14	258	96	126	10	...	26
Total ...		1,855	841	691	267	6	50

Those trees were converted by the merchants into logs, kolhus (sugar-mills,) karis, sleepers, joras (cart-axles), plough-shafts, sides and ends of beds, and rolling pins.

The merchants pay the royalty as they export the timber, the rates varying considerably according to the size and description of the timber.

In 1880-81 the rates were from 6 annas to Re. 1-2-0 per cubic foot for sawn timber and from 4 to 12 annas for axed timber.

For 1881-82 they were increased to from 7½ annas to Rs. 1-3-6 for sawn timber and to from 6½ to 14½ annas for axed timber.

Up to the close of the year 1881-82, 13,069 cubic feet had been exported and Rs. 8,595 were realized on it, or an average of about 10½ annas per cubic foot. The actual amount of timber exported from these 1,855 trees cannot be given now; but by the middle of May last, when the Divisional Officer submitted his annual report, 46,443 cubic feet had been exported, and then a considerable amount still remained in the forests. But even taking the above amount (46,443 cubic feet), we have an average of over 25 cubic feet per tree, which, considering that only 1,532 of the trees were over 4½ feet in girth (the remainder being either under 4½ feet girth or hollow), is an excellent outturn, and it shows that the wood has not been cut to waste.

Two hundred and eighty-seven sál tees felled and converted by departmental agency in this division yielded 6,796 cubic feet of timber, or about 23⅔ cubic feet per tree: 2,245 sál trees felled and converted by departmental agency in the Kumaun Division yielded 46,313 cubic feet of timber, or about 20⅔ cubic feet per tree. In these two cases, though, it must be borne in mind that the branches and small timber are still lying in the forests and are not included in the yield.

The Garhwál Division being rather out of the way, purchasers are not so willing to come to its depôts for timber as to the depôts of the Kumaun Division, nor will they give such high prices. Besides that there was always a difficulty in the Garhwál Division in procuring sufficient carts and cattle to haul the timber from the forests to the depôts.

Taking everything into consideration, the system of allowing the trees to be converted and exported by merchants is, I consider, better suited for the Garhwál Division than conducting the timber operations by departmental agency. The outturn per tree during both years of the experiment has been excellent, showing clearly that the wood has not been wasted, and a clear profit of an average all-round rate of 10½ annas per cubic foot (it was about 9⅓ annas in 1880-81) is a good price for only the second year's trial of the new system. The rates are not yet quite as high as they might be; they will be raised a little every year until we arrive at the proper market value of the timber, but this must be done very gradually, so as not to frighten the merchants.

4.—FINANCIAL RESULTS.

80. The following statement shows the results of 1881-82 compared with the results of the previous year :—

	1880-81.	1881-82.
	Rs.	Rs.
Receipts	1,26,662	1,19,484
Expenditure	49,133	56,468
Surplus ...	77,529	63,016
Percentage of expenditure to receipts	38·7	47·2

81. DETAIL OF REVENUE :—

Description.	Amount.	Total.
	Rs. a. p.	Rs. a. p.
I.*a* —Sáin karis	15,604 6 6	15,604 6 6
II.*a* —Sál removed by purchasers	45,884 3 9	
Sisham ditto	314 8 3	
Sandan ditto	2,136 14 10	
Tún ditto	304 9 5	
Khair ditto	15,767 2 10	
Sein ditto	778 12 10	
Other kinds ditto	591 6 8	
II.*b* —Firewood removed by purchasers	913 2 0	
II.*c*.—Bamboos ditto	27,034 7 6	
II.*d*.—Grazing and fodder grass	2,397 15 3	
II *e*.—Other minor produce	6,302 14 0	1,02,426 1 4
III.—Confiscated, drift and waif wood	1,021 1 3	1,021 1 3
V.*a* —Fines and forfeitures	194 6 0	
V.*b*.—Other sources	238 10 0	433 0 0
Total Revenue ...	...	1,19,484 9 1

82. Compared with 1880-81 there is :—

	Rs.
A decrease under I. of	24,100
An increase under II. of	16,427
An increase under III. and V. of	495

The decrease under I. is due to the system of allowing trees to be converted and exported by purchasers to a greater extent, thereby lessening the amount of timber brought to depôt by departmental agency.

The increase under II. is explained in the following statement :—

Material.	Amount realized.		Difference.	
	1880-81.	1881-82.	More.	Less.
	Rs.	Rs.	Rs.	Rs.
Sál removed by purchasers	33,588	45,884	12,296	...
Sisham ditto	268	315	47	...
Sandan ditto	2,507	2,137	...	370
Tún ditto	220	305	85	...
Khair ditto	6,531	15,767	9,236	...
Sain ditto	778	779	1	...
Other kinds ditto	878	591	...	287
Firewood ditto	5,509	913	...	4,596
Bamboos ditto	25,512	27,034	1,522	...
Grazing and fodder grass	2,395	2,398	3	...
Other minor produce	7,813	6,303	...	1,510
Total ...	85,999	1,02,426	23,190	6,763

83. The amount realized from green sál trees converted by merchants was Rs. 1,782 in 1880-81 and Rs. 8,595 in 1881-82.

The amount realized from dry and fallen sál in 1880-81 was Rs. 31,806, and in 1881-82 Rs. 37,289.

There was a large demand for khair chúrans (pestles) for sugar-mills, owing to the heavy crop of sugarcane in 1881-82.

The large revenue from firewood in 1880-81 was abnormal, owing to the enormous number of trees knocked down by the floods of September, 1880.

The revenue from "other minor produce" fluctuates considerably.

84. The value of the depôt stock at the commencement of the year was Rs. 5,772, and at the close of the year Rs. 14,307.

The outstandings at the close of the year were—

	Rs.
Due from contractors	24
" " disbursers	3,562
" to purchasers	3,500

The last sum (Rs. 3,500) is an advance made by Meerut merchants for timber which at the close of the year had not been supplied.

85. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Heading.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	15,604	I.	24,030	A. $\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 2,067.
II.—Other revenue	10,3,880	II, III, IV., & V.	17,006	A. $\left(II+III+IV+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 2,067.
III.—Formation, protection, and improvement of forests.	...	...	21,632	A. $\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 2,066.
Total ...	1,19,484	...	62,668	

GANGES DIVISION.

1.—AREA AND BOUNDARIES.

86. AREA.—There was no change.

87. BOUNDARIES.—The demarcation of the outer boundaries is completely finished.

To complete the permanent demarcation of village lands within the forests 114 temporary pillars remained to be replaced by permanent ones at the close of the year.

One hundred and sixty-four permanent and 84 temporary pillars were erected round village lands during the year at a cost of Rs. 657.

Fifty-three pillars were erected at the angles of the portions of forests open to the exercise of recorded rights at a cost of Rs. 189.

All the permanent pillars were numbered with black paint through stencil-plates; the numbers are entered on sketch maps and will be reproduced on the Forest Survey Department maps.

Ninty-seven loose masonry pillars were erected to demarcate the village lands within the block of the leased forest of Tehri Garhwál which has (since the close of the year) been declared "reserved." These will now be replaced by permanent masonry pillars. The total cost of demarcation work during the year was Rs. 896.

88. BREACHES OF FOREST RULES.—There were 18 cases during the year, including 22 persons; of these five cases, including seven persons, were tried by the District Magistrate, and convictions were obtained in three cases, including three persons; one case, including two persons, was tried by the Rája of Tehri and conviction obtained; 12 petty cases, including 13 persons, were disposed of by the Divisional Officer.

89. ROADS AND BRIDGES.—In British territory three new bridle roads—from Ghási Ram to Chasaria, from Suni Sot to Dogadda, and from Mawakot to Sigaddi—were constructed. The total length was 17¾ miles and the total cost Rs. 110. One hundred and thirteen miles of existing roads were repaired at a cost of Rs. 1,000. In Tehri Garhwál Rs. 642 were spent on making the Bhagirathi valley road passable and repairing the abutments of several of the bridges.

During the year Government decided that this road shall be repaired entirely by the Forest Department in future, the work done by the Rája having been so very unsatisfactory.

90. BUILDINGS.—A 1st class rest-house was commenced at Chila and Rs. 1,493 spent on it during the year.

The masonry of the lower story was finished, leaving only 3,000 cubic feet for next season out of a total of 12,082 cubic feet. The timber, lime and stone required to complete the building is all collected on the spot. The timber (sál) had to be brought from the forests of the Garhwál Division at a cost of Re. 0-11-8 per cubic foot. Most of the stone was procured ready hewn, but in large blocks, from the ruins of an old Hindu temple in the Mandhal Sot, delivered at the house for Rs. 11 per 100 cubic feet.

Petty repairs were executed at existing buildings and temporary revenue-collecting chaukis were built as usual.

91. WELLS.—A temporary well was made at Papidanda by sinking a hollow sál log into the ground to collect the water of a spring, which is the only water there. It cost Rs. 51, and the water is now abundant, sweet and cool.

92. REPRODUCTIVE MEASURES.—Rs. 99 were spent on a garden at Haldukhata and 100 mango trees were planted in it to form a future camping-ground.

Rs. 81 were spent on a similar grove at Chila and in digging a 4′ × 3′ ditch round it.

3.—YIELD AND WORKING.

93. The yield is shown in the following statements :—

(*a*) *Trees felled by departmental agency (selection fellings).*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	2	15	
Sain ...	448	21,746	Converted into scantlings.
Deodar ...	861	77,490	Dead trees converted into sleepers by the sleeper contractor
Boxwood ...	330	2,041	420 cubic feet (372 pieces) sent to England for sale.
Ash ...	2	11	
Miscellaneous poles,	14,327	64,065	376 trees converted into scantlings, remainder (under 4½ feet girth) used in supplying Ganges Canal.
Total ...	15,970	165,368	

(*b*) *Trees given free to village right-holders.*

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	34	Not known	To right-holders.
Deodar ...	246		All dry trees to right-holders in Tehri Garhwál.
Chír ...	339		To right-holders in Tehri Garhwál.
Sandan ...	4		To right-holders.
Sain ...	33		Ditto.
Miscellaneous ...	160		To right-holders in British and Tehri territories.
Total ...	816		

(c) Timber removed by purchasers.

Kind of tree.	Number.	Contents in cubic feet.	Remarks.
Sál ...	...	13,645	From dead and fallen wood.
Sain ...	...	17,338	Ditto.
Sisham ...	...	1,026	Ditto.
Sandan ...	...	1,491	Ditto.
Deodar ...	...	718	Ditto.
Gosam ...	Not known	3,243	From green trees allowed to be cut.
Miscellaneous ...	...	9,881	From dead and fallen wood.
Total ...	...	47,340	

(*d*) The following is a summary of the number of trees felled :—

Sál	36
Sain	481
Sandan	4
Deodar (dead trees)	1,107
Boxwood	330
Chir	339
Ash	2
Miscellaneous	14,487
Total ...	16,786

(*e*) YIELD IN MATERIAL.—The following statement shows the yield in material and amounts realized in 1881-82 compared with the results of 1880-81 :—

Material.	1880-81.		1881-82.		*Difference.*	
	Quantity.	Amount realised.	Quantity.	Amount realized.	Quantity.	Amount realized.
	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.
Timber of all kinds ...	77,094	28,194	95 951	40,284	+ 18,857	+ 12,090
	Mds.		Mds.		Mds.	
Firewood ...	17,384	664	22,454	779	+ 5,070	+ 115
Bamboos ...	7 400 814	27,442	10,913,768	36,643	+ 3,512,954	+ 9,201
Grazing and fodder grass,	No details	1,543	No details	1,632	...	+ 89
Other minor produce ...	Various...	2,014	Various...	2,403	...	+ 389
Miscellaneous ...	Ditto	1,499	Ditto	927	...	− 572
Total ...	...	61,356	...	82,668	...	+ 21,312

94. More timber (Rs. 14,654 worth) was sold from depôt, but less (Rs. 2,564) was removed from the forests by purchasers. There was a very brisk demand for bamboos.

4.—FINANCIAL RESULTS.

95. The following statement shows the results of 1881-82 compared with the results of the previous year :—

	1880-81.	1881-82.
	Rs.	Rs.
Receipts	61,356	82,668
Expenditure	29,951	39,726
Surplus ...	31,405	42,942
Percentage of expenditure to receipts	48·8	48·0

96. DETAIL OF REVENUE:—

Description.	Amount.			Total.		
	Rs.	a.	p.	Rs.	a.	p.
Ia.—Balhas, tors and ballis	12,177	14	3			
Karis of sain and other inferior kinds	15,000	0	0			
Boxwood	2,027	13	4			
Ash	19	10	6			
				29,225	6	1
IIa.—Sál removed by purchasers	5,156	4	5			
Deodar ditto	94	4	6			
Sisham ditto	320	8	1			
Sandan ditto	465	13	9			
Sain ditto	3,250	12	8			
Gosam ditto	1,013	7	11			
Semal ditto	141	0	0			
Chir ditto	277	0	0			
Other kinds ditto	339	3	7			
IIb.—Firewood and charcoal	778	10	9			
IIc.—Bamboos	36,643	5	8			
IId.—Grazing and fodder grass	1,632	3	4			
IIe.—Other minor produce	2,403	2	4			
				52,515	13	0
III.—Confiscated, drift and waif wood	756	13	0			
				756	13	0
Va.—Fines and forfeitures	122	2	8			
Vc.—Other sources	47	13	0	169	15	8
Total Revenue ...	...			82,667	15	9

97. Compared with 1880-81 there is:—

	Rs.
An increase under I. of	14,654
Ditto under II. of ... ... —	7,230
A decrease under III. and V. of	572

The increase under I. is due to more timber having been sold from depôt.

The increase under II. is explained in the following statement:—

Material.	Amount realized.		Difference.	
	1880-81.	1881-82.	More.	Less.
	Rs.	Rs.	Rs.	Rs.
Sál removed by purchasers	5,827	5,156	...	671
Deodar ditto	492	94	...	398
Sisham ditto	230	321	91	...
Sandan ditto	706	466	...	240
Sain ditto	3,992	3,251	...	741
Gosam ditto	1,467	1,013	...	454
Semal ditto	...	141	141	...
Chir ditto	3	277	274	...
Bel ditto	646	...	...	646
Khair ditto	22	...	...	22
Tún ditto	27	...	...	27
Other kinds ditto	209	339	130	...
Firewood and charcoal removed by purchasers	664	779	115	...
Bamboos " "	27,442	36,643	9,201	...
Grazing and fodder grass	1,543	1,632	89	...
Other minor produce	2,015	2,403	388	...
Total ...	45,285	52,515	10,429	3,199

98. The large demand for bamboos was due to the prosperous state of the country. Good crops in the plains are sure signs of a good revenue from our forests.

99. The value of depôt stock at the commencement of the year was Rs. 2,480, and at the close of the year Rs. 4,866.

The outstandings at the close of the year were:—

	Rs.
Due by contractors	292
" by disbursers	1,072
" to timber merchants by the division, amount received in advance from them	9,020

100. The following statement shows the receipts and expenditure of the year under the three main budget headings:—

Headings.	Receipts.		Charges.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	29,225	I	22,333	A $\left(I+V+\frac{VI}{2}+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 900.
II.—Other revenue ...	53,443	II. III. IV. & V.	10,478	A $\left(II+III+IV+\frac{VII}{3}+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 900.
III.—Formation, protection, and improvement of forests.	...	...	9,615	A $\left(\frac{VI}{2}+\frac{VII}{3}+VIII+\frac{IX}{3}\right)+\frac{B}{3}+$ Direction, Rs. 900.
Total ...	82,668	...	42,426	

CHAPTER III.

RESERVED, PROTECTED, AND OTHER FORESTS UNDER CHARGE OF REVENUE OFFICERS.

101. The Jhánsi Division forests are all "reserved."

The Lalitpur Division forests are "reserved" and "protected."

The Bánda Division forests have not yet been gazetted.

JHANSI DIVISION.

102. Mr. Deas, Officiating Deputy Commissioner, was in charge of the forests the whole year.

1—AREA AND BOUNDARIES.

103. There was no change in area during the year. The boundaries are demarcated. Rs. 4-8-0 were spent on repairs and renewals of pillars.

2.—PROTECTION AND IMPROVEMENT.

104. Breaches of forest rules.—There were six cases of theft of forest produce, in which 21 persons were prosecuted: 20 were convicted, of whom 5 were flogged and 15 fined.

105. Roads.—The road connecting the Sukwan-Dhukwan forest with the Jhánsi-Lalitpur high road was repaired at a cost of Rs. 23-14-6.

106. Buildings.—Existing depôts and storehouses were repaired as usual. A chauki in the Sukwan-Dhukwan forest, to cost Rs. 200, was commenced.

107. Reproductive measures.—In the Ganupura forest 100 teak trees, 229 sisham, and 71 tún were planted; some teak seed was sown in the shade of worthless trees where the soil appeared to be suitable, and a little babul seed was sown broadcast.

In the Dhukwan forest 40 teak trees, 170 sisham, and 20 tún were planted, and some teak seed was sown as in Ganupura.

A little babul seed was also sown broadcast in the Sukwan, Khairi and Rora forests. The Deputy Commissioner says:—"The teak sowings of last year and of this year have not as yet germinated. The babul sowings of this year failed owing to the early cessation of the rains. Those of last year and the mahua sowings of

1880 have proved fairly successful. There are at present about 1,400 two-year-old mahua seedlings alive, *viz.*, 500 in Dhukwan, 300 in Ganupura, 500 in Bhasneo, and 100 in Magarpur."

The plantation work cost Rs. 318-3-9, of which Rs. 243-3-9 was for watering.

The following statement shows the number of transplanted trees alive on the 31st March, 1882:—

Name of forest.	*Transplanted trees alive on the 31st March, 1882.*			Total.
	Teak.	Sisham.	Other kinds.	
Dhukwan	610	216	20	876
Ganupura	450	479	71	1,000
Magarpur	...	400	...	400
Bhasneo	...	400	...	400
Total ...	1,090	1,495	91	2,676

3.—YIELD AND WORKING.

108. Four hundred and eighty-seven kardahi (*Anogeissus pendula*) and teak trees were felled during the year. They were small trees of about 9 inches girth. The cubic contents of the whole 487 are approximately estimated at 304 cubic feet.

109. The following table shows the yield of wood and bamboos during 1881-82:—

Sales of wood and bamboos during 1881-82.

Description.	From depôts or locally.	From forests.	Given free to villagers.	Total.
Poles	720	176	180	1,076
Firewood	2,112 mds.	2,374 mds.	170 mds.	4,656 mds.
Charcoal	420 "	157 "	..	577 "
Bamboos	6,869	8	...	6,877
Kurias	42,984	91,540	5,308	139,832
Kiras	3,913	128	26	4,067

110. At the close of the year there remained in stock 158 poles, 822 maunds firewood, 654 maunds charcoal, 5,135 bamboos, 6,726 kurias, and 675 kiras.

At the close of the year there were five carts and ten bullocks belonging to the department, two new carts having been constructed during the year at a cost of Rs. 61, and two pairs of bullocks having been purchased for Rs. 80, to replace two pairs which were accidentally burnt to death.

4.—FINANCIAL RESULTS.

111. The following statement shows the results of last three years:—

	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Receipts	3,648	3,755	4,860
Expenditure	2,910	3,095	2-966
Surplus ...	738	660	1,894
Percentage of expenditure to receipts ...	79·7	82·3	610.

112. The 1881-82 revenue was derived from the following sources:—

	Rs.	a.	p.
Timber, including poles, kurias and kiras (small sticks used for roofing)	954	12	6
Firewood and charcoal	843	14	1
Bamboos	65	3	2
Grass and grazing	2,771	2	4
Fruits, lac and honey	177	6	6
Rent of cultivated land	47	9	9

113. The increase in revenue was due to the high prices realized for the leases of the various forest runds (grass tracts) consequent on the failure of the grass crop of the preceding year.

114. The value of depôt stock at the commencement of the year was Rs. 613.

The value of depôt stock at the close of the year was Rs. 510.

The outstandings at close of the year were:—Rs. 172-15-6 due from the lessees of two grass runds (since recovered) and Rs. 360 due from disbursers.

115. The following statement shows the receipts and expenditure of the year under the three main budget headings:—

Headings.	Receipts.		Charges.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	987	I.	1,294	A. $\left(\text{I.} + \text{V.} + \frac{\text{VI.}}{2} + \frac{\text{VII.}}{3} + \frac{\text{IX.}}{3}\right) + \frac{\text{B.}}{3} +$ Direction, Rs. 50.
II.—Other revenue ...	3,873	II., III., IV., & V.	525	A. $\left(\text{II.} + \text{III.} + \text{IV.} + \frac{\text{VII.}}{3} + \frac{\text{IX.}}{3}\right) + \frac{\text{B.}}{3} +$ Direction, Rs. 50.
III.—Formation, protection, and improvement of forests.	...	...	1,297	A. $\left(\frac{\text{VI.}}{2} + \frac{\text{VII.}}{3} + \text{VIII.} + \frac{\text{IX.}}{3}\right) + \frac{\text{B.}}{3} +$ Direction, Rs. 50.
Total ...	4,860	...	3,116	

LALITPUR DIVISION.

116. Mr. R. H. Story, Assistant Commissioner, held charge of the forests throughout the year, except for five weeks when he was on leave.

1.—AREA AND BOUNDARIES.

117. There was no change in the area. One hundred stone boundary pillars were erected round the Sojna forest at a cost of Rs. 60-1-0.

2.—PROTECTION AND IMPROVEMENT.

118. Breaches of forest rules.—Eighty-two persons were prosecuted during the year, of whom 63 were convicted. Nearly all the cases were of a petty description and the persons convicted were fined small sums according to their circumstances. The only exception was a case in which three men were convicted of taking fire into the fire-protected forests, and were sentenced to three months' imprisonment each.

119. Buildings.—Existing chaukis were repaired as usual. A small rest-house and a well were built at Morari. The rest-house cost Rs. 200 and the well Rs. 100. Rs. 40 was also spent on building a forest guard's chauki at Sojna.

3.—YIELD AND WORKING.

120. One hundred and fourteen shej (*Lagerstrœmia parviflora*) and 20 bel (*Ægle marmelos*) trees were felled during the year, the cubic contents of the former being estimated at 668 feet and of the latter 210 feet.

121. The following table shows the yield of wood and bamboos during 1881-82:—

Sales of wood and bamboos during 1881-82.

Description.	From depôts or locally.	From forests.	Total.
Poles	1,155	14,441	15,616
Firewood	90 mds.	7,840 mds.	7,930 mds.
Bamboos	1,166,737	354,238	1,520,975
Kurias	270,397	20,200	290,597

122. The value of stock at depôts at the commencement of the year was Rs. 66, and at the close of the year Rs. 121.

At the close of the year there were 12 carts and 26 bullocks belonging to the department. During the year six new carts were made, and three bullocks were purchased for Rs. 60; six of the old carts were condemned as worn out and one bullock died.

4.—FINANCIAL RESULTS.

123. The following statement shows the results of the last three years:—

	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Receipts	7,023	8,076	11,006
Expenditure	3,585	3,977	4,728
Surplus ...	3,438	4,099	6,278
Percentage of expenditure to receipts ...	51·0	49 2	42·9

124. The 1881-82 revenue was derived from the following sources:—

	Rs.	a.	p.
Timber	1,981	12	7
Firewood	107	9	0
Bamboos	5,352	1	8
Grazing dues	2,232	9	6
Fruits and other minor produce	1,331	11	0

125. Compared with 1880-81 there is an increase under—

	Rs.
Timber	493
Firewood	45
Bamboos	1,754
Grazing dues	516
Fruits and other minor produce	122

126. This steady increase of revenue from the Lalitpur forests is very satisfactory and reflects great credit on Mr. Story, the officer in charge. He ascribes the increase to the fact of it becoming more known year by year that the produce of the forests is now obtainable without any difficulty, of good quality and at low rates; and also to the general prosperity of the country, due to good seasons, enabling the people to compete more briskly at the annual auctions for grazing dues and other minor produce.

127. Both Mr. Story and his Deputy Commissioner urge very strongly an increase to their forest establishment now that the income has increased so considerably. This case was submitted to you in my office letter No. 36, dated 29th June, 1882.

128. The value of depôt stock at the commencement of the year was Rs. 66; the value of depôt stock at the close of the year was Rs. 121; the outstandings at the close of the year were *nil*.

129. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	Receipts.		Charges.	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	6,494	I.	2,716	$A\left(I.+V.+\frac{VI.}{2}+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B}{3}+$ Direction, Rs. 133.
II.—Other revenue ...	5,512	II., III., IV. & V.	895	$A\left(II.+III.+IV.+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B.}{3}$ + Direction, Rs. 133.
III.—Formation, protection, and improvement of forests.	...	...	1,517	$A.\left(\frac{VI}{2}+\frac{VII.}{3}+VIII.+\frac{IX.}{3}\right)+\frac{B.}{3}+$ Direction, Rs. 134.
Total ...	11,006	...	5,128	

BANDA DIVISION.

130. The annual report was prepared by Mr. LaTouche, Officiating Collector of Bánda; but Mr. Rose, late Joint Magistrate of Karwi, had charge of the forests during the year. The Officiating Collector writes :—" Beyond supporting Mr. Rose, my share in the work during the past year has been little or nothing."

1.—AREA AND BOUNDARIES.

131. The total area of the forests is 75,459·92 acres, of which 53,535·73 acres within, and 716 acres outside, the forest line have been wholly acquired, and 21,208·19 acres within the forest line are under Government control. See para. 5 (*c*).

132. BOUNDARIES.—Rs. 73-8-9 were spent on demarcation work during the year. The Collector appears to think that the boundaries are sufficiently demarcated, but that the cut lines through the forests require to be cleared. See para. 6 (*h*).

2.—PROTECTION AND IMPROVEMENT.

133. The Bánda forests were constituted a division of this Circle in September, 1881. As negotiations are still proceeding for the acquirement of the 21,208 acres at present under Government control, it has been thought advisable not to gazette any of the forests and bring them under the Forest Act until the whole area has been acquired. At present forest offences in the Bánda Division are punishable only under the Penal Code.

134. The Bánda forests are confined to the Badausa and Tirohan parganas, by far the greater part of them being in Tirohan. They have been divided into blocks, compartments, and sub-compartments, as shown in the following statement :—

Number and name of block.	Number of compartments.	Number of sub-compartments.	Area within forest line.	Area acquired by Government.		Area remaining to be acquired.	Remarks.
				Within the forest line.	Outside the forest line.		
			Acres.	Acres.	Acres.	Acres.	
Block I.—South Tirohan,	4	18	38,465·43	30,436·16	...	8,029·27	*This will be exchanged for land within the forest line.
„ II.—Dadri ...	4	13	30,096·49	16,917·57	*716	13,178·92	
„ III.—Badausa ...	1	1	6,182	6,182	...	...	
Total ...	9	32	74,743·92	53,535·73	716	21,208·19	

135. The following is the summary of cost incurred in the acquisition of the 54,251·73 acres of land of which Government is the unconditional proprietor, except in the three cases marginally noted.

1. Ram Sahai Gir and the wife of Harbans Brahman, the former zamindar of mauza Deori, are entitled to the grant of Rs. 10 yearly in cash and 24 mahua trees free from rent as malikana grant.
2. The zamindars of mauza Amchurnarua have rights to gather mahua produce free from rent.
3. The zamindar of Khatauta Mamaniya, mahal Jagmohan, the right to his share of mahua produce reserved.

	Rs.	a.	p.
(a)—Total cash payment in the acquisition of 27,676·70 acres ...	15,100	0	0
Annual reduction of jama (Rs. 921-8-0 × 25) capitalized ...	23,037	8	0
(b)—Temporary remissions of Government revenue in the acquisition of 1,441·21 acres at Rs. 617 × 3	1,851	0	0
(c)—Permanent alienation of Government revenue in the acquisition of 20,634·69 acres at Rs. 1,546 × 25	38,650	0	0
Perpetual annuities in acquiring—			
(d)—10,496·13 acres at Rs. 300 × 25	7,500	0	0
(e)—Reduction of jama at Rs. 51 × 25	1,275	0	0
Total ...	87,413	8	0

	Rs.	a.	p.
The average cost per acre inclusive of capitalized loss of revenue is ...	1	9	10
Exclusive of that it is	1	2	7
The cost of land purchased outright for cash, exclusive of loss of revenue, is	0	11	2

3.—YIELD AND WORKING.

136. No information is available under this heading, but the *value* of the yield is given under "Financial results."

4.—FINANCIAL RESULTS.

137. The figures for 1881-82 are :—

	Rs.	a.	p.
Receipts	12,531	10	7
Expenditure	14,974	0	9

They are made up as follows :—

	1879-80.	1880-81.	1881-82.	Total as shown in Forest Department accounts for 1881-82.
	Rs.	Rs.	Rs.	Rs.
Receipts	606	5,182	6,744	12,531
Expenditure	...	2,358	12,616	14,974

138. The revenue was derived from the following sources :—

Name of article.	January to March, 1880.	1880-81.	1881-82.
	Rs.	Rs.	Rs.
Timber of sorts	...	1,033	748
Firewood and charcoal	...	...	75
Bamboos	2	168	108
Grazing dues	109	1,390	1,228
Minor produce	335	1,486	2,880
Duty on imports from Native States	...	21	82
Rent of cultivated land	160	1,084	1,610
Weighing fees and manorial dues	...	...	12
Total ...	606	5,182	6,743

139. From the above it will be seen that the receipts and expenditure shown in the accounts for 1881-82 include all revenue and expenditure since January, 1880.

140. The value of timber and other produce on hand at close of the year was Rs. 167-15-0.

The outstandings at the close of the year were :—

	Rs. a. p.
On account of contractors and disbursers	*Nil.*
On account of revenue	2,120 0 0

141. The following statement shows the receipts and expenditure of the year under the three main budget headings :—

Headings.	*Receipts.*		*Charges.*	
	Amounts.	Budget heads.	Amounts.	Budget heads.
	Rs.		Rs.	
I.—Timber and other produce removed from the forests by Government agency.	3,473	I.	2,884	$A\left(I.+V.+\frac{VI.}{2}+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B}{3}+$ Direction Rs. 83.
II.—Other revenue ...	9,058	II., III., IV., & V.	474	$A\left(II.+III.+IV.+\frac{VII.}{3}+\frac{IX.}{3}\right)+\frac{B}{3}+$ Direction, Rs. 83.
III.—Formation, protection and improvement of forests.	...	...	11,866	$A\left(\frac{VI.}{2}+\frac{VII.}{3}+VIII.+\frac{IX.}{3}\right)+\frac{B}{3}+$ Direction, Rs. 84.
Total ...	12,531	...	15,224	

CHAPTER IV.

GENERAL REMARKS.

142. 1881-82 was a good year for revenue; the crops in the plains and hills were good, and therefore the demand for forest produce was brisk. The sugarcane crop was exceptionally good, and consequently there was a great run on khair "chúrans" and sál kolhus for sugar-mills. The introduction of the iron mills has had no effect on the demand for wood for mills from our forests as yet. Bamboos brought in Rs. 10,700 more than during the previous year, and the exports during April and May promise well for a good revenue from this source in 1882-83. Rs. 9,200 of the increase was in the Ganges Division, and some portion of this is due to the death of the man-eating tiger which for a year or more infested the outer range of hills between the Koh river and the Ganges. This tiger was killed over the body of a woman by a party of the Gurkha regiment from Dehra early in January last.

143. Timber fetched very good prices. The Meerut merchants are our principal purchasers, but we also dispose of a great deal to merchants from Najíbabad, Moradabad, Pilibhit, and other towns. The class and amount of timber produced and our system of disposal appear to meet the demand and suit the style of trade admirably.

144. There were no disturbances or disagreements between forest officials and villagers. The villagers on the borders of the forests have now become accustomed to forest rules and derive considerable benefit from the department. Almost every one of these neighbouring villages has some interest in forest work: the well-to-do men are given contracts for road-making, fire-conservancy, &c.; and the poorer class of labourers can always find profitable employment by working for the contractors, or cutting wood, bamboos and bhábar grass, &c., for sale.

145. Forest conservancy has no doubt caused deer to increase in some parts, but in these places there are no village crops for them to damage; they live peaceably in the forests and are quite contented with the good forage they get there. Tigers and leopards have probably increased in these parts also, but as they naturally prefer a fat deer to a thin cow, they rarely kill cattle, unless some unfortunate beast walks into their jaws. I have known several instances of these well-fed forest tigers

killing a buffalo or cow and not eating a bit of it. The Commissioner of Kumaun reported one instance of cattle being killed by tigers on the eastern edge of the Garibulchand forest in western Kumaun. A rifle was purchased and a native shikari employed, but by this time the grass outside the forest had been burnt and the tigers had retired elsewhere. A tigress was killed by a shooting party at this place at the latter end of December. During my tour in eastern Kumaun in March the scarcity of tigers was a noticeable fact; there were hardly any tracks to be seen, and most of the hersdmen whom I asked said that they had never been less troubled by tigers. Only in one place (between Haldwani and Chorgalia) did I hear of cattle having been killed. Tigers which take to killing cattle can be very easily destroyed from *machâns* erected near the carcase; they are generally very bold and they hardly ever fail to return to the kill the second night, and this is the kind of shooting which natives excel in.

146. It is not generally known that tigers and leopards may be shot at night by lantern light. A lantern furnished with a reflector should be hung on the left side of the person sitting in the *machân*, so that the kill can be plainly seen, and also the sights of the rifle when raised to the sportman's shoulder. So far as my experience goes it does not matter whether the night is moonlight or dark. Neither tigers nor leopards seem to notice the lantern at all: they come up to the kill just as boldly as if there was nothing unnatural. I mention this to show that there need be no apprehension of forest conservancy producing too large an increase of tigers, for there is no difficulty in destroying those which take to killing cattle.

147. Wild elephants have increased very much of late, and they do an enormous amount of damage to the forests by eating and destroying immense quantities of bamboos and knocking down numbers of young sâl, khair and other trees. Besides this there are always several well-known "rogues" about, which run at every person they see and interfere with our work a good deal. Some 200 of these brutes in our small area of forests do an incalculable amount of damage; and unless Government wishes to catch them itself, or make money out of them in some other way, I most strongly recommend that we be allowed to have them shot and harassed with the object of forcing them to leave our forests altogether and retire across the Sârda into Nepal. Small and indifferently organized kheddahs like those which used to come from Pattiala, Rampur, Kashipore, &c., are of no use at all; they only catch the smallest calves, being afraid to tackle even half-grown animals. A kheddah to be of any use in our forests should consist of from 60 to 100 elephants with five or six good fighting khûnkis, well appointed with all the necessary ropes and nooses, a sufficient staff of trackers, gun men and sowars, and the most important point of all, a first class man at the head of it. The kheddah of the late Mahârâja of Balrampur was perfect in these respects, and consequently it captured between 50 and 60 elephants in the two years (1873 and 1879) it came to our forests.

148. All of the officers of the superior staff worked very satisfactorily and managed their divisions well. They also report favorably of their subordinates, except in a few instances, but complain bitterly of the insufficient and ill-paid establishments in the three large revenue-producing divisions of Kumaun, Garhwâl, and Ganges.

(NOTE.—This was reported on in my office letter No. 27, dated 5th June, 1882, and the two memos. which followed it).

149. Conservator's office was maintained in excellent order by Mr. Braidwood, assisted by Mr. Sheils, who is an admirable head-clerk in every respect.

150. Divisional fire-conservancy reports cannot be prepared until the commencement of the rains, and so do not reach Conservator's office until his annual report is too far advanced to admit of their being embodied under "protection and improvement;" therefore it is more convenient to give the results of fire-conservancy in the concluding paragraphs of his report, which here follow.

RESULTS OF FIRE CONSERVANCY OPERATIONS FOR THE PERIOD FROM THE COMMENCEMENT OF THE RAINS OF 1881 TO THE COMMENCEMENT OF THE RAINS OF 1882.

151. (*a*)—**Naini Tal Division.**—Attempts were made to protect 19,380 acres, which is the area of the whole division, with the exception of 258 acres of steep grassy slopes which are burnt by the department every year.

There were four fires during the year, by which 952 acres were burnt over.

The first was about 11-30 A.M. on the 5th March in the Hinnan forest. It was lighted in three places close above the new district road which runs from Bhim Tal to Khyrna, but the culprit was not caught. It was put out almost immediately by the foresters and fire-watchers and did no damage.

The second broke out about 7 P.M. on the 10th April in the Jioli and Kasani forests, near the Jioli bridge, on the road from Naini Tal to Ranibagh. The fire originated from a village field ; three men were tried for the offence, but there was not sufficient evidence to convict them. One hundred and eighty acres of indifferent forest were burnt.

The third fire occurred about midday on the 25th April. It originated in the forests of the iron-works grant and was carried across the fire line by fallen pine spines into the Charta forest, burning 311 acres.

The fourth fire commenced about noon on the 20th May at the Sirori village, at the east end of the Hinnan forest. It was lighted by two small boys who were smoking in a field ; they threw the remains of the pipe into the dry grass, and the whole hillside was in a blaze at once. This was a very destructive fire : the grass under the pine trees was quite dry, and I fear that most of the seedlings of three feet high and under are killed. It burnt over 461 acres.

Rs. 541 were spent on fire-conservancy during the year, or 5·35 pie per acre attempted.

(*b*) **Ranikhet Division.**—Fire-conservancy was considerably extended in this division and with fair success. The following are the areas which were attempted to be protected :—

	Acres.
Ránikhet reserved forest	4,800
Padholi protected ditto	640
Chaubatia ditto ditto	1,280
Ganiadeoli ditto ditto	1,280
Kathallekh ditto ditto	1,700
Seoni ditto ditto	2,560
Total ...	12,260

Six fires occurred, by which 257 acres were burnt.

The first was on the 29th December in the Kathallekh forest. It originated from fires left by travellers and burnt 150 acres.

The second was on the 23rd January in the reserved forest. It was lighted by soldiers, but they were not identified. Only five acres were burnt.

The third was on the 19th March in the Kathallekh forest ; 50 acres were burnt. It entered the forest from a fire-line which was being burnt, and was due to the carelessness of two forest guards, one of whom was dismissed and the other fined.

The fourth was on the 24th April in the Ganiadeoli forest ; 40 acres were burnt. It was lighted in three places at once in the middle of the forest, and was probably done intentionally, but the culprits were not caught.

The fifth was on the 24th May in the Seoni forest ; 10 acres were burnt. It was lighted by the carelessness of the contractor who was making the fence. It spread from the fire he had to char the fence-posts.

The sixth was on the 4th June in the Padholi forest ; only two acres were burnt. The cause of this fire was not discovered.

The cost of fire-conservancy was Rs. 470, or 7·36 pie per acre attempted.

(*c*) **Kumaun Division.**—The same areas which were attempted to be protected last year were again attempted this year, with an addition of 2,300 acres in the Nindhore block, which is the portion of this block which was felled in during the year. The following is a detail of the areas :—

					Acres.
Chilkia-Mohan	block	...	...	...	46,240
Kotah	do.	...	...	...	23,298
Garibul Chand	do.	...	...	...	7,112
Horai	do.	...	...	..	2,565
Sudlimat, Jaunla sál	do.	...	...	...	8,320
Nindhore	do.	...	...	...	2,300
			Total	...	89,835

Three fires occurred, by which 10,261 acres were burnt.

The first was on the 26th December in the Horai block ; 241 acres were burnt. The fire got into the forest when the lines were being burnt, and was due to carelessness of the forester and his guards in not being present at the time. The fire-lines of this forest are cleared by the Forest Department, and then the Commissioner takes charge of it, which is an excellent arrangement.

The second was on the 20th and 26th of March in the Jaunla sál-Sudlimat forest ; the whole area, 8,320 acres, was burnt. I saw this forest early in March and pointed out the necessity of burning the remainder of the outside grass (particularly that on the west side) at once, as it was then very dry. This, apparently, was not properly done, for the Deputy Conservator reports "the fire must have originated from outside, though nothing positive is known on this point." I consider that this fire was entirely due to the carelessness of our own officers. Certainly there was a very strong west wind blowing at the time ; but still, if the grass on the outside of the western fence had been burnt properly, the fire would not have occurred.

The Deputy Conservator went to the spot soon after the occurrence, but, as his enquiries did not result in fixing the blame on any one, no one was punished.

The third fire occurred on the 5th May in the Chilkia-Mohan block and burnt 1,700 acres. This also got into the forest from the outside, and therefore the department is to blame for it.

There is hardly any excuse for fires entering our conserved forests from the outside, and very little excuse for fires spreading from line-clearing. In the former instance the outside line ought to be made so perfectly secure, by constantly burning it and the outside jungle, that nothing is left on the ground to allow of fire travelling into the forest. In the latter instance no fire-line should be burnt except in the presence and under the personal superintendence of the forester of the range, which is a well-known standing order.

Fire-conservancy cost Rs. 7,350 in this division, or 15·70 pie per acre attempted.

(*d*) **Garhwál Division.**—The following is a list of the areas attempted to be protected :—

					Acres.
Dhikola	...	...	...	...	16,036
Paterpani, Manupani, Jamnogwár	...	...	...	...	21,070
Pipal Sot, Goujpani	...	...	...	...	3,978
Jhara Sot, Jamnauli	...	...	...	...	6,887
Sishamkhata	...	...	...	...	2,020
Portion of North Patli Dun range included in Mr. Dansey's valuation survey		...	...	...	50,783
Rehar	...	...	...	...	12,478
			Total	...	113,252

Last year only a portion (18,314 acres) of the north Patli Dun range included in the valuation survey was attempted ; but this year the whole of it has been attempted to be protected, making an addition of 32,469 acres.

Six fires occurred during the year, 4,036 acres being burnt.

The first was on the 24th November in the Dhikala forest; it burnt 100 acres. This was quite accidental. The Divisional Officer lighted the outside grass with a favorable wind, but the wind suddenly changed and carried the fire across the road into the forest.

The second was on the 7th March in the Rehar forest; 160 acres were burnt. It was lighted accidentally by a cartman passing through the forest by an authorized road. His cart was burnt and he was punished by the Bijnor District Magistrate.

The third was on the 24th March, also in the Rehar forest, 1,820 acres of which were burnt. Along the south-western edge of the forest there is village jungle with very long grass, which the Divisional Officer did not like to light for fear of burning the crops in some of the fields which are scattered about in the jungle. The villagers set fire to this grass when there was a strong west wind blowing, and it was carried across the fire-line. In future the outer fire-line here will be doubled in breadth, and the villagers will be requested to inform the forester when they intend to burn their jungle.

The fourth fire was on the 29th April in the north Patli Dun range near Halgadi; 1,200 acres were burnt. This was supposed to have been caused by travellers inside the forest, as all jungle outside the outer fire-line had been carefully burnt.

The fifth and sixth were on the 27th and 29th May, also in the north Patli Dun range near Golirewarh and Bakwa ; 756 acres were burnt. The origin of these fires is not known ; they were both lighted inside the conserved forests.

The cost of fire conservancy in this division was Rs. 7,010, or a little over 11·89 pie per acre attempted.

(*e*) **Ganges Division**:—The following is a list of the areas attempted to be protected:—

				Acres.
Tangnore (leased) deodar forests		...	...	8,872
Papidanda forest (British Garhwál)		...	...	521
Hazara	ditto ditto	...	...	2,000
Jogi-chour	ditto ditto	...	...	1,500
Koria	ditto ditto	...	...	3,000
Andhermajhera	ditto ditto	...	...	1,500
Sukrao	ditto ditto	...	...	1,500
		Total	...	18,893

The areas are the same as last year, with the exception of the addition of Sukrao 1,500 acres.

Three fires occurred during the year, by which 1,715 acres were burnt.

The first was in December in the leased deodar forests; five acres were burnt. It was lighted accidentally by shikaris, but as they took so much trouble to put it out before much damage was done the Divisional Officer did not prosecute them.

The second was on the 25th March in the Hazara forest, 1,700 acres being burnt.

The hills to the south were all on fire, and on the 25th March the establishment was engaged in burning away from the southern outer fire-line of the Hazara forest to meet the approaching fires. The Assistant Conservator was on the spot, and had just turned to go home, thinking all was safe, when he observed that the Hazara forest was on fire some considerable distance inside the fire-line. There was a very strong wind blowing at the time and all efforts to check the progress of the fire were unavailing; burning leaves and grass were carried 200 or 300 yards by the wind and fires sprang up in every direction. All that could be done was to light the forest at the northern end and so stop the fire from getting into Jogi-chour.

The third fire occurred about the same date as the second in the Sukrao forest and 10 acres were burnt.

Fire conservancy cost Rs. 743 in this division, or 7·55 pie per acre.

(*f*) **Jhansi Division.**—The following are the figures supplied by the Deputy Commissioner as the areas of forests attempted to be protected from fire :—

				Acres.
Sukwan forest	...	...	...	542
Dhukwan ditto	...	...	...	860
Magarpur ditto	...	...	...	20
Bhasneo ditto	...	...	...	18
		Total	...	1,440

There were no failures. The cost of fire conservancy was Rs. 150, or 20·00 pie per acre.

(*g*) **Lalitpur Division.**—The areas attempted to be protected are the same as in the previous year, *viz.*—

				Acres.
Deogarh forest	...	...	...	998
Garauli ditto	...	...	...	751
		Total	...	1,749

There were no failures. The cost was Rs. 100, or 10·97 pie per acre.

152. The following table shows a comparison of the work done this year and last year :—

Year.	Area attempted to be protected.	Failures.	Area actually protected.	Amount expended during the year.	Percentage of failures to area attempted.	Cost per acre of area attempted.
	Acres.	Acres.	Acres.	Rs.	Acres.	Pies.
1880-81 ...	215,558	11,345	204,213	12,6[illegible]2	5·2	11·01
1881-82 ...	250,809	17,221	239,588	16,364	6·7	12·02

153. Considering that the year was so very exceptionally unfavorable, no rain to speak of having fallen between September and May, the results in all divisions except Kumaun are very good.

154. Of the 22 fires which occurred during the year, 2 (*a*) were apparently lighted intentionally, 13(*b*) were either accidental or the origin was not known, 4 (*c*) were from fires which crossed the outer fire-lines from outside jungles, and 3 (*d*) were fires which spread from line-burning or fence-making.

		Acres.
(*a*)	burnt	40
(*b*)	"	4,729
(*c*)	"	12,151
(*d*)	"	301

(*a*) and (*b*) are unavoidable causes ; but (*c*) and (*d*) ought with proper care to be avoidable, though accidents will, of course, sometimes occur.

10,020 acres of (*c*) and 241 acres of (*d*) occurred in the Kumaun Division.

155. I have reported very fully on fire-conservancy operations because it is the most difficult and the most important of all our work, and because I consider it highly advisable to record the origin of every fire which occurred, in order that Government may clearly understand the causes of all the failures and the difficulties which we have to contend with, and also that every Divisional Officer may be made acquainted with what happened in the other divisions of the Circle to which he belongs.

OFFICE OF CONSERVATOR OF FORESTS,
CENTRAL CIRCLE, N.-W. P. AND OUDH :
Naini Tal, the 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

STATEMENTS.

ANNUAL FORM No. 49.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Area of Reserved Forests, 1881-82.

Division or range.	Civil district or territory.	Name of forest.	Area on 1st April, 1881.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March, 1882.		Number and date of notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
Kumaun Division,	Kumaun district,	Block No. I.	80,467	126	...	...	80,467	126	No addition or transfer during the year.	The areas are subject to correction on the completion of the survey by the Forest Survey Department.
		Ditto II.	10,937	17	...	...	10,937	17		
		Ditto III.	35,200	55	...	...	35,200	55		
		Ditto V.	65,606	103	...	...	65,606	103		
		Ditto VII.	8,960	14	...	...	8,960	14		
		Ditto VIII.	147,520	230	...	...	147,520	230		
		Ditto IX.	43,520	68	...	...	43,520	68		
		Ditto X.	4,320	7	...	...	4,320	7		
		Ditto XI.	4,640	7	...	...	4,640	7		
		Ditto XII.	5,440	8	...	...	5,440	8		
			320	...	...	...	320	...		
		Total ...	406,930	635	...	...	406,930	635		
Ránikhet ditto ...	Kumaun ditto ...	Block No. XI., Ránikhet ...	4,480	7	...	...	4,480	7	Ditto ...	The area is subject to correction on the receipt of area statement from the Forest Survey Department.
Garhwál ditto ...	Garhwál ditto ...	Block No. I., Patli Dún ...	152,000	237	...	...	152,000	237	Ditto ...	The areas are subject to correction on the completion of the survey by the Forest Survey Department.
		Ditto II., Kotri Dún ...	115,520	180	...	...	115,520	180		
		Ditto VI., Kartia ...	800	1	...	...	800	1		
	Bijnor ditto ...	Chandi	18,497	29	...	...	18,497	29		
		Rehar	15,719	25	...	...	15,719	25		
		Total ...	302,536	472	...	...	302,536	472		
Ganges ditto ...	Native Garhwál...	Bhagirathi Forest	A portion of the forests leased from His Highness the Rája of Tehri.							
	Garhwál district.	Block No. III., Sanch ...	10,880	17	...	...	10,880	17	Ditto ...	
		Ditto IV., Laldhang ...	23,360	36	...	...	23,360	36		
		Ditto V., Khara ...	56,320	88	...	...	56,320	88		
		Chandi	20,882	32	...	...	20,882	32		
		Total ...	111,442	173	...	...	111,442	173		

Jhánsi Division ...	Jhánsi district ...	Jhansi ...	10,130	18	...	...	10,130	18	No addition or transfer during the year.	The areas are subject to correction.
		Mau ...	6,084	9	...	...	6,084	9		
		Garotha ...	5,127	8	...	...	5,127	8		
		Moth ...	2,272	4	...	...	2,272	4		
		Total ...	23,613	37	...	...	23,613	37		
Lalitpur ditto ...	Lalitpur ditto ...	Lalitpur ...	255	...	...	...	255	...	Ditto ...	
		Bánsi ...	4,733	7	...	...	4,733	7		
		Talbahat ...	11,653	18	...	...	11,653	18		
		Balabahat ...	30,186	47	...	...	30,186	47		
		Bánpur ...	4,745	7	...	...	4,745	7		
		Mahroni ...	1,283	2	...	...	1,283	2		
		Maraura ...	40,290	62	...	...	40,290	62		
		Total ...	93,145	143	...	...	93,145	143		
		GRAND TOTAL ...	942,146	1,467	...	...	942,146	1,467		

Area of Protected Forests, 1881-82.

Naini Tal Division,	Kumaun district,	Block No. I. ...	24,408	38	...	1,471	22,744	36	...	Rectification, see para. (1a) of report.
		Ditto II. ...					193			
		Total ...	24,408	38	...	1,471	22,937	36		
Ránikhet ditto ...	Kumaun ditto ...	Block No. I., Machor ...	211	...	...	...	211	...	No addition or transfer during the year	The area is at present only approximate, pending the receipt of area statements from the Forest Survey.
		Ditto II., Bhatronj ...	5,760	9	...	...	5,760	9		
		Ditto III., Tetalikhet or Seoni ...	4,480	7	...	...	4,480	7		
		Ditto IV., Siun ...	640	1	...	...	640	1		
		Ditto V., Bellekh ...	640	1	...	...	640	1		
		Ditto VI., Kathallekh ...	1,920	3	...	...	1,920	3		
		Ditto VII., Ganiadeoli ...	1,280	2	...	...	1,280	2		
		Ditto VIII., Karchuli ...	203	...	...	...	203	...		
		Ditto IX., Chilianao ...	640	1	...	...	640	1		
		Ditto X., Chaubatia ...	1,280	2	...	...	1,280	2		
		Ditto XII., Padholi ...	640	1	...	...	640	1		
		Ditto XIII., Dwarson ...	1,920	3	...	...	1,920	3		
		Ditto XIV., Airadeo ...	16,640	26	...	...	16,640	26		
		Ditto XV., Seahi Devi ...	1,920	3	...	...	1,920	3		
		Total ...	38,174	59	...	...	38,174	59		
Lalitpur ditto ...	Lalitpur ditto ...	Lalitpur ...	65	...	...	...	65	...	Ditto ...	The area is subject to correction.
		Talbahat ...	2,363	3	...	...	2,363	3		
		Total ...	2,428	3	...	...	2,428	3		
		GRAND TOTAL ...	65,010	100	...	1,471	63,539	98		

NAINI TAL :
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle.

ANNUAL FORM No. 49.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Area of Forests, 1881-82.

Division or range.	Civil district or territory.	Name of forest.	*Area on 1st April*, 1881. Acres.	*Area on 1st April*, 1881. Equivalent in square miles.	*Added during the year.* Acres.	*Excluded or transferred to other heads.* Acres.	*Area on 31st March*, 1882. Acres.	*Area on 31st March*, 1882. Equivalent in square miles.	Number and date of notification of addition or transfer.	Remarks.
		I.—GOVERNMENT VILLAGES.								
		1. Ambha	2,242·77	...	...	...	2,242·77	...		The area 5,754·47 acres shown in column 6 has been transferred to Government during the year 1881-82, by exchange and purchase from villages held under 45-55 arrangement, *vide* para. 4 of report.
		2. Amchurnarua	4,216·66	...	...	...	4,216·66	...		
		3. Uldan	357·01	...	357·01	...	714·02	...		
		4. Uncha Dih	413·88	...	...	...	413·88	...		
		5. Parasin	3,623·30	...	...	...	3,623·30	...		
		6. Jars	1,139·94	...	...	...	1,139·94	...		
		7. Chauri	4,036·70	...	...	...	4,036·70	...		
		8. Chulhi Sheu Parshad ...	1,627·66	...	...	...	1,627·66	...		
		9. Deori	4,273·31	...	...	...	4,273·31	...		
		10. Donda	5,416·14	...	...	...	5,416·14	...		
		11. Rajohan	4,618·80	...	...	...	4,618·80	...		
		12. Rukmakhurd	132·62	...	...	...	132·62	...		
		13. Takraoban	644·80	...	...	...	644·80	...		
		14. Tarka Pandri	730·93	...	...	...	730·93	...		
		15. Matdar	6,729·10	...	...	...	6,729·10	...		
		16. Mau	385·53	...	...	...	385·53	...		
		17. Kuluba	6,182·	...	...	...	6,182·	...		
		18. Rampur	899·28	...	1,798·56	...	2,697·84	...		
Banda	Bánda district ...	19. Gidarha	110·83	...	110·83	...	221·66	...		
		20. Cheriya Buzurg ...	...	...	1,237·83	...	1,237·83	...		
		21. Mamaniya	...	...	2,250·24	...	2,250·24	...		
		Total ...	47,781·26	...	5,754·47	...	53,535·73	...		
		II.—VILLAGES HELD UNDER 45-55 ARRANGEMENT.								
		22. Bhera	777·96	...	...	...	777·96	...		*The total area of 45-55 villages as shown in column 5 is 21,208·19, but it is exclusive of 5,754·47 acres exchanged and sold to Government in 1881-82. The actual area on 21st March, 1881, was therefore 21,208·19 +5,754·47=26,962·66 acres.
		23. Tekariya	2892·39	...	...	...	2,892·39	...		
		See No. 8 { Chulhi M. Balkishan ...	26·25	...	...	...	26·25	...		
		See No. 8 { Ditto M. Mikramgir ...	13·	...	...	...	13·	...		
		24. Chuilaha	1,502·38	...	...	...	1,502·38	...		
		25. Dadri	4,697·	...	...	...	4,697·	...		
		26. Rukma Buzurg	1,978·21	...	...	...	1,978·21	...		
		27. Karaoban	728·43	...	...	...	728·43	...		
		Chitaghati (included in Karaoban,	69·43	...	...	...	69·43	...		
		28. Kalyanpur	2,670·66	...	...	...	2,670·66	...		
		29. Gursarai	908·43	...	...	...	908·43	...		
		30. Maraiyan	1,885·68	...	...	...	1,885·68	...		
		31. Mabuli	948·76	...	...	...	948·76	...		
		32. Nibu	2,109·61	...	...	...	2,109·61	...		
			21,208·19*	...	†5,754·47	†5,754·47	21,208·19	...		† This area is exclusive of 716 acres in mauza Chhuili outside the forest line, *vide* para. 4 of report.
			†5,754·47	...	...	...	...	...		
			26,962·66	...	...	...	...	...		
			74,743·92	...	...	...	74,743·92	...		
		†Add area outside the forest line	716·	...	...	...	716 †	...		
			75,459·92	...	5,754·47	†5,754·47	75,459·92	...		

BÁNDA:
The 17th May, 1882.

J. D. LATOUCHE,
Offg. Collector of Bánda.

ANNUAL FORM No. 50.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Area of Plantations, 1881-82.

Division.	Name of plantations.	On 1st April, 1881. Area.	On 1st April, 1881. Cost.	Added during 1881-82. Area.	Added during 1881-82. Cost.	On 31st March, 1882. Total Area.	On 31st March, 1882. Total Cost.	REMARKS.
		Acres.	Rs.	Acres	Rs.	Acres.	Rs.	
Kumaun ...	Various plantations imperfectly stocked, incomplete or success uncertain.	...	1,254	...	(a)561	...	1,815	(a). Expenditure under A. VIII.d.
Nain Tal,	Ayarpatha	5	16	...	...	5	16	(b). The difference of seven acres between this and last year's returns is not an addition but a correction
	Jabar	(b)147	828	...	23	147	851	
	Deopatha	...	...	25	(c)54+400	77	454	(c). Rs 400 transferred from cost of former year's incomplete plantations.
	Nairwari			27				
	China			25				
	Kahla	...	...	35	(d)5+296	35	301	(d). Rs 296 transferred from cost of former year's incomplete plantations.
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	(e)1,540	...	542	...	1,386	(e). Rs 696 transferred as above.
	Total ...	152	2,384	112	(f)624	264	3,008	(f). Expenditure under A. VIII.d.
anikhet,	Jakhdeo (upper)	367	11,598	...	1,866	367	14,881	
	Ditto (lower)							
	Garkhet							
	Jainoli							
	Darimkhet							
	Ghingarukhal							
	Various other plantations imperfectly stocked, incomplete or success uncertain.	...	1,417	...		...		
	Total ...	367	13,015	...	(g)1,866	367	14,881	(g). Expenditure under A. VIII.d
Garhwál ...	Boxar	...	497	...	(h)632	..	560	(h). Acacia seed has now been sown on the site of this old plantation.
	Prempuri and Saneh	...	19	...	(i)169	...	368	(i). Plantation of fruit trees.
	Total ...		696	...	(k)232	...	928	(k). Expenditure under A. VIII.d.
Gan es ...	Haldukhata		..	..	(l)38	...	38	(l). Expenditure under A. VIII.d.
Jhánsi ...	Sukhwan and Dhukwan	21	354	3	90	24	444	
	Babinah	3	29	...	...	3	29	
	Magarpur	9	158	...	69	9	227	
	Gangpura	9	185	9	90	18	275	
	Kheri	16	10	5	2	21	12	* The areas given in the annual report form No 46, for 1880-81, were wrongly entered through a mistake.
	Bhaneo	9	151	...	66	9	217	
	Pargana Moth	461	86	...	...	461	86	
	Rora	...	...	2	1	2	1	
	Total ...	528	973	19	(m)318	547	1,291	(m) Expenditure under A. VIII. d.
Lalitpur ...	...	...	...	...	...	...	...	
	Total ...	1,647	18,322	131	(n)3,639	1,178	21,961	(n). Total expenditure of the year under A. VIII.d.

NAINI TAL:
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No 51—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Area of forest tracts protected from fire during the dry season of 1882 (*to accompany report for* 1881-82).

Division.	Forest tracts.	Up to 15th June, 1881.		During dry season of 1882.					Year in which protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 30th June, 1882.		
		Acres	Rs. a. p	Acres.	Acres.	Acres.	Rs. a. p	Rs a. p	Rs. a. p.	
Naini Tal ...	Block I.	19,153	2,326 0 0	19 187	952	18,235	541 0 0	2,867 0 0	1,876	
	Ditto II.	...	...	193	...	193				
	Total ...	19,153	2,326 0 0	19,380	952	18,428	541 0 0	2,867 0 0	...	
Ránikhet ...	Ránikhet reserved forest	4,800	766 0 0	4,800	5	4,795	119 0 0	885 0 0	1874	
	Padholi protected forest	...	...	640	2	638	57 0 0	57 0 0	1882	
	Chaubattia ditto	...	...	1,280	...	1,280	83 0 0	83 0 0	1882	
	Ganiadeoli ditto	320	167 0 0	1,280	40	1,241	63 0 0	230 0 0	1878	
	Kathallekh ditto	320	184 0 0	1,700	200	1,500	72 0 0	256 0 0	1878	
	Seoni ditto	2,560	112 0 0	2,560	10	2,550	76 0 0	188 0 0	1880	
	Total ...	8,000	1,229 0 0	12,260	257	12,003	470 0 0	1,699 0 0	...	
Kumaun ...	Chilkia Mohan	46,240	18,827 0 0	46,240	1,700	44,540	3,912 0 0	22,739 0 0	1873	
	Kotah	22,851	5,141 0 0	23,298	...	23,298	1,799 0 0	6,940 0 0	1876	
	Garibulchand	7,112	4,135 0 0	7,112	...	7,112	538 0 0	4,673 0 0	1876	
	Horai	2,565	5,287 0 0	2,565	241	2,324	223 0 0	6,297 0 0	1876	
	Sadlimat Jaunla Sal	8,315		8,320	8,320	...	767 0 0			
	Nindhore	...	...	2,300	...	2,300	91 0 0	91 0 0	1882	
	Total ...	87,083	33,390 0 0	89,835	10,261	79,574	7,350 0 0	40,740 0 0	...	
Garhwál ...	Dhikála	15,797		16 036	100	15,936			1873	
	Paterpani, Maunpáni, Jamnagwar ...	20,010		21,070	...	21,070			1877	
	Pipal Sot, Goujpani	3,978		3,978	...	3,978			1877	
	Jara Sot, Jamnoli	6,835	20,698 9 0	6 887	...	6,887	5,590 0 0	26,288 0 0	1877	
	Sishamkhata	2,017		2,020	...	2,020			1876	
	Portion of North Patli Dún range included in Mr. Dansey's Valuation Survey.	18,314		50,783	1,956	48,827			1881	
	Rehar	2,986	643 0 0	12,478	1,980	10,498	1,420 0 0	2,063 0 0	1881	
	Total ...	69,937	21,341 0 0	1,12,252	4,036	1,09,216	7,010 0 0	28,351 0 0	...	

Paras. 151 to 155 of the report.

Ganges ...	Tangnore leased Deodar Forests ...	8,872	32 0 0	8,872	5	8,867	7 0 0	39 0 0	1876	VIA.
	Papidanda	521	836 0 0	521	...	521			1875	
	Hazara	2,000	98 0 0	2,000	1,700	300				
	Jogichaur	1,500	104 0 0	1,500	...	1,500	736 0 0	1,906 0 0	1881	
	Koria	3,000	108 0 0	3,000	...	3,000				
	Andhermajhera	1,500	24 0 0	1,500	...	1,500				
	Sukrao	...		1,500	10	1,490			1882	
	Total ...	17,393	1,202 0 0	18,893	1,715	17,178	743 0 0	1,945 0 0	...	
Jhánsi ...	Sukwan, ...	860	897 0 0	542	...	542			1874	
	Dhukwan			860	...	860	150 0 0	1,065 0 0	1874	
	Magarpur	38	18 0 0	20	...	20			1881	
	Bhasneo			18	...	18			1881	
	Total ...	898	915 0 0	1,440	...	1,440	150 0 0	1,065 0 0	...	
Lalitpur ...	Deogarh	998	433 0 0	998	...	998	100 0 0	533 0 0	1875	
	Garauli	751		751	...	751				
	Total ...	1,749	433 0 0	1,749	...	1,749	100 0 0	533 0 0	...	
	GRAND TOTAL ...	2,04,213	60,836 *0 0	2,56,809	17,221	2,39,588	16,364 0 0	77,200 0 0	...	

		Rs.
Charged in previous years	...	... 60,836
" " 1881-82	...	... *10,278
" " 1882-83	...	... 6,086
Total	...	... 77,200

* Rs. 4,364 of the total expenditure under A. VIII E. during 1881-82. included in the amount "charged in previous years."

NAINI TAL :
The 22nd July, 1882.

G. GREIG,
Conservator, Central Circle.

ANNUAL FORM No. 52.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Prosecutions for breaches of Forest Rules during 1881-82.

Forest division and civil district.	Cases pending from 1880-81.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing in prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons	
Naini Tal Division.														
Kumaun district	...	1	7	2	5	15	15	13	17	2	5	15	22	...
Ránikhet Division.														
Kumaun district	3	...	37	8	1	46	49	46	117	3	10	49	127	...
Kumaun Division.														
Kumaun district	2	4	37	4	145	190	192	188	358	4	28	192	386	...
Garhwál Division.														
Garhwál district	...	...	34	...	13	47	47	43	66	4	8	47	74	...
Ganges Division.														
Garhwál district	...	2	8	2	8	20	20	14	15	4	7	18	22	2
Jhánsi Division.														
Jhánsi district	...	...	6	...	...	6	6	6	20	...	1	6	21	...
Lalitpur Division.														
Lalitpur district	...	...	19	...	5	24	24	21	63	3	19	24	82	...
Total ...	5	7	148	16	177	348	353	331	656	20	78	351	734	2

NAINI TAL:
The 22nd July, 1882.

G. GREIG,
Conservator of Forests Central Circle.

FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Summary of revenue of the different divisions during 1881-82.

Budget heads receipts.	Direction	Naini Tal Division.	Kumaun Division.	Ranikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Bánda Division.	Total during 1881-82.
I.—Timber and other produce removed from the forests by Government Agency :—	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs a. p.
a. Timber	...	10,503 13 9	49,811 8 0	...	15,604 6 6	29,225 6 1	48 10 0	1,018 2 7	1,781 10 4	1,07,993 9 3
b. Firewood and charcoal	...	19,833 3 11	...	42,214 0 1	...	...	478 8 10	9 9 0	5 0 0	62,540 5 10
c. Bamboos	...	...	...	...	...	...	64 11 2	4,466 8 2	277 4 1	4,808 7 5
d. Sandal-wood	...	...	...	...	...	...	...	...	...	...
e. Grass and other minor produce ...	...	681 10 0	...	...	...	...	395 8 1	...	1,408 14 3	2,486 0 4
II.—Timber and other produce removed from the forests by consumers or purchasers :—										
a. Timber	*Nil*	265 8 0	1,01,972 15 0	1,067 6 0	65,777 10 7	11,058 6 11	28 11 3	963 10 0	...	1,81,134 3 9
b. Firewood and charcoal	...	1,395 6 6	5,790 15 2	297 10 0	913 2 0	778 10 9	365 5 3	98 0 0	69 11 9	9,708 13 5
c. Bamboos	...	25 2 0	11,291 6 11	...	27,034 7 6	36,643 5 8	0 8 0	885 9 6	0 4 0	75,880 11 7
d. Grazing and fodder grass	...	223 3 9	8,689 7 1	701 4 0	2,397 15 3	1,632 3 4	2,771 2 4	2,232 9 6	2,727 13 9	21,375 11 0
e. Other minor produce	...	96 4 0	15,793 10 4	1,224 4 0	6,302 14 0	2,403 2 4	659 5 8	1,331 11 0	3,291 12 5	31,102 15 9
III.—Confiscated, drift and waif wood ...	...	...	367 4 9	...	1,021 1 3	756 13 0	...	...	...	2,145 3 0
IV.—Revenue from forests not managed by Government :—										
a. Duty on foreign timber and other forest produce	...	...	...	...	...	...	...	...	103 0 0	103 0 0
b. Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...	...
V.—Miscellaneous :—										
a. Fines and forfeitures	...	206 11 0	630 0 10	114 2 0	194 6 0	122 2 8	...	...	...	1,267 6 6
b. Refunds	...	37 0 10	...	...	...	...	...	...	...	37 0 10
c. Other sources	...	15 0 0	91 5 10	147 3 6	238 10 0	47 13 0	47 9 9	...	2,866 4 0	3,453 14 1
Total receipts ...	*Nil*	33,282 15 9	1,94,438 9 11	45,765 13 7	1,19,484 9 1	82,667 15 9	4,860 0 4	11,005 11 9	12,531 10 7	5,04,037 6 9

CALCUTTA :
The 13th June, 1882

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Summary of expenditure of the different divisions during 1881-82.

Budget heads.	Direction.	Naini Tal Division.	Kumaun Division.	Ranikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Bánda Division.	Total during 1881-82.
A —CONSERVANCY AND WORKS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. a.	Rs. a. p.	Rs. a. p.	Rs a. p.
I.—*Timber and other produce removed from the forests by Government agency* :—										
(a) Timber	...	9,110 15 7	19,174 8 7	...	9,749 10 9	10,320 12 4	5 2 4	184 11 4	494 12 0	49,040 8 11
(b.) Firewood and charcoal	...	17,080 9 7	...	22,884 10 4	...	...	306 15 9	...	...	40,272 3 8
(c.) Bamboos	...	...	...	...	...	...	12 14 0	1,176 0 5	3 4 0	1,195 2 5
(d.) Sandal-wood	...	...	...	...	...	...	...	...	...	...
(e.) Grass and other minor produce ...	...	383 9 2	...	...	...	...	182 2 5	...	904 5 6	1,470 1 1
II.—*Timber and other produce from the forest by consumers or purchasers*	...	...	8,799 1 5	49 3 0	5,020 13 6	3,426 15 9	...	...	...	17,296 1 8
III.—*Confiscated, drift and waif wood*	...	...	...	...	142 14 6	58 14 8	...	...	...	201 13 2
IV.—*Revenue from forests not managed by Government* :—										
(a.) Duty on foreign timber and other forest produce ...	...	...	...	...	...	...	...	...	...	...
(b.) Revenue from shared and private forests ...	...	...	...	...	...	...	...	...	...	...
V.—*Rent of leased forests, and payments to shareholders in forests managed by Government* ...	...	...	...	...	...	4,000 0 0	...	...	996 12 1	4,996 12 1
VI.—*Live stock, stores, tools and plant* :—										
(a.) Purchase of cattle	...	...	...	...	1,200 0 0	800 0 0	80 0 0	60 0 0	...	2,140 0 0
(b.) Feed and keep of cattle	...	...	2,301 5 8	...	1,481 10 4	718 14 8	383 4 0	710 7 1	...	5,595 9 9
(c.) Stores, tools and plant	145 4 0	145 15 0	545 15 9	48 7 5	2,191 10 3	522 13 5	61 0 0	150 0 0	19 8 0	3,830 9 10
VII.—*Communications and buildings* :—										
(a) Roads and bridges	...	436 8 6	8,796 14 8	101 5 9	10,713 5 1	1,751 12 11	...	...	240 6 6	22,040 5 5
(b) Buildings	173 9 6	1,661 12 10	1,625 2 7	473 11 2	1,974 10 6	1,499 10 3	52 9 6	239 14 6	130 0 0	7,831 0 10
(c) Other works	...	0 6 0	26 8 0	...	30 9 6	51 0 0	...	100 0 0	150 0 0	358 7 6
VIII.—*Demarcation, improvement and extension of forests* :—										
(a.) Demarcation	...	...	997 6 4	46 9 6	900 0 0	896 6 11	4 8 0	60 1 0	73 8 9	2,978 8 6
(b.) Compensation for land and rights ...	...	...	...	...	...	...	...	...	10,315 8 0	10,315 8 0
(c) Surveys and working-plans	...	90 5 10	2,522 7 4	650 8 0	...	...	1 7 0	...	23 5 0	3,288 1 2
(d.) Plantations	...	624 4 5	561 4 1	1,865 14 9	231 10 0	37 10 0	318 3 9	...	...	3,638 15 0
(e.) Protection from fire	...	365 6 7	7,043 9 0	157 15 0	6,178 8 8	646 12 7	150 0 0	100 0 0	...	14,642 3 10
(f.) Other works	...	...	725 13 4	888 8 4	44 0 0	23 8 0	35 8 0	...	968 15 3	2,686 4 11
IX.—*Miscellaneous* :—										
(a.) Refunds	...	...	...	...	96 3 0	17 12 0	...	...	251 6 10	365 5 10
(b.) Law charges	...	...	...	...	...	...	...	...	...	...
(c.) Other charges	...	16 13 7	1 12 0	33 2 4	88 12 0	2,374 12 6	30 11 3	20 0 0	62 6 6	2,628 6 2
Total, A—Conservancy and Works ...	318 13 6	29,916 11 1	53,121 12 9	27,199 15 7	40,044 6 1	27,147 12 0	1,624 6 0	2,801 2 4	14,637 2 5	1,96,812 1 9

CALCUTTA:
The 13th June 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Summary of expenditure of the different divisions during 1881-82.

Budget heads	Direction.	Naini Tal Division.	Kumaun Division.	Ránikhet Division.	Garhwál Division.	Ganges Division.	Jhánsi Division.	Lalitpur Division.	Bánda Division.	Total during 1881-82.
B.—ESTABLISHMENTS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward, Total A., Conservancy and works.	318 13 6	29,916 11 1	53,121 12 9	27,199 15 7	40,044 6 1	27,147 12 0	1,624 6 0	2,801 2 4	14,637 2 5	1,96,812 1 9
I.—*Salaries* :—										
(a.) Conservators	15,303 3 7	...	...	...	...	...	...	...	...	15,303 3 7
(b.) Superior officers	...	5,818 5 4	15,699 6 7	5,770 5 8	6,073 5 4	5,400 0 0	...	...	...	38,761 6 11
(c.) Subordinate forest and depôt establishment.	...	1,057 1 10	9,255 0 11	1,913 5 11	6,268 14 0	3,162 0 1	1,104 0 0	1,549 13 2	...	24,310 3 11
(d.) Office establishments	3,756 0 0	240 0 0	2,100 0 0	540 0 0	1,870 0 0	1,398 10 10	60 0 0	204 0 0	...	10,168 10 10
(e.) Deputation and special allowances...	...	...	3,000 0 0	1,800 0 0	...	...	...	...	...	4,800 0 0
II.—*Travelling allowances* :—										
(a.) Conservators	1,466 5 6	...	...	...	...	...	...	...	...	1,466 5 6
(b.) Superior officers	...	641 0 0	2,554 8 0	808 4 0	900 0 0	1,330 0 0	...	...	...	6,233 12 0
(c.) Subordinate forest and depôt establishments.	...	...	243 0 2	...	112 0 0	...	121 6 8	95 9 6	...	572 0 4
(d.) Office establishments	191 5 0	1 0 6	399 9 6	25 11 10	353 3 6	472 15 2	...	...	...	1,443 13 6
III.—*Contingencies* :—										
(a.) Stationery	15 14 0	2 4 0	84 6 10	21 5 6	95 0 0	97 9 10	12 0 0	22 1 9	16 6 4	367 0 3
(b.) Carriage of tents and records ...	457 4 0	133 5 0	482 10 4	201 13 7	179 14 11	449 1 9	...	...	...	1,904 1 7
(c.) Rents, rates, and taxes	26 0 0	60 0 0	24 0 0	...	24 0 0	25 0 0	12 0 0	...	...	171 0 0
(d.) Pay of police guards	300 0 0	...	...	...	...	...	...	...	...	300 0 0
(e.) Official postage	198 7 0	24 3 0	96 15 6	31 13 6	105 3 0	69 7 6	22 15 0	48 5 0	...	597 5 6
(f.) Sundries	199 6 4	269 10 0	232 2 7	27 7 0	442 8 3	173 12 11	9 6 6	7 3 10	320 8 0	1,682 1 5
Total B.—Establishments ...	21,913 13 5	8,246 13 8	34,171 12 5	11,140 3 0	16,424 1 0	12,578 10 1	1,341 12 2	1,927 1 3	336 14 4	1,08,081 1 4
GRAND TOTAL OF EXPENDITURE ...	22,232 10 11	38,163 8 9	87,293 9 2	38,340 2 7	56,468 7 1	39,726 6 1	2,966 2 2	4,728 3 7	14,974 0 9	3,04,893 3 1

CALCUTTA:
The 13th June, 1882.

A. L. HOME,
Asst. Comptroller-General (Forests).

ANNUAL FORM No. 54.—(PRESCRIBED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account current for the year 1881-82.

DR.

Heads of account.	Rs. a. p.	Rs. a. p.
To cash in hand on 1st April, 1881	...	17,793 15 0
Revenue as per annual summary (Form 53)	...	5,04,037 6 9
Service funds.		
Military Fund, Bengal	61 6 10	
Military Orphan Fund, Bengal	51 3 2	
Uncovenanted Service Family Pension Fund, Bengal ...	1,249 6 0	1,362 0 0
Forest cash remittances (local.)		
Forest cheques paid	3,02,152 11 7	
Inter-divisional transfers	8,477 10 11	3,10,630 6 6
Advances recoverable	...	59,345 9 8
Suspense	...	3 2 10
Account current (other Governments.)		
Government of India	...	949 13 9
Inter-departmental transfers :—		
Public Works Department (other branches)	122 5 7	
Civil Departments, Mathematical Instrument Department...	148 8 0	270 13 7
Total	...	8,94,393 4 1

CR.

Heads of account.	Rs. a. p.	Rs. a. p.
By expenditure as per annual summary (Form No. 53) ...	...	3,04,893 3 1
Forest cash remittances (local.)		
Remittances to treasuries	4,22,397 13 4	
Inter-divisional transfers	7,577 10 11	
		4,29,975 8 3
Advances recoverable	...	62,650 8 11
Suspense	...	3 2 10
Account current (other Governments)		
Government of India	2,024 15 10	
Government of Panjab	10,564 3 9	
		12,589 3 7
Inter-departmental transfers :—		
Public Works Department (other branches)	12,915 9 5	
Military Department, Bengal	55,032 6 6	
Civil Departments—Rewards for passing examinations ...	180 0 0	
		68,127 15 11
Cash in hand on 31st March, 1882	...	16,153 9 6
Total	...	8,94,393 4 1

CALCUTTA :
The 13th June, 1882.

A. L. HOME,
Asst Comptroller-General (Forests).

ANNUAL FORM No. 55.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Outstandings and liabilities on account of contractors and disbursers for 1881-82.

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings).	By Department (liabilities.)	
	TRANSACTIONS DEBITED AND CREDITED TO ADVANCES RECOVERABLE.								
	Rs. a. p.	Rs. a. p.	Rs a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Directions	...	6,477 6 1	6,477 6 1	27 11 2	6,450 12 11	6,478 8 1	1 2 0	...	
Naini Tal	...	9,818 8 3	9,818 8 3	586 7 4	9,991 14 3	10,578 5 7	759 13 4	...	
Kumaun	...	18,295 9 0	18,295 9 0	3,417 12 0	19,118 3 0	22,535 15 0	4,240 6 0	...	
Ránikhet	...	150 0 0	150 0 0	650 0 0	...	650 0 0	500 0 0	...	
Garhwál	...	7,695 9 5	7,695 9 5	2,060 1 11	9,221 9 5	11,281 11 4	3,586 1 11	...	
Ganges	...	11,637 14 11	11,637 14 11	762 7 10	12,239 3 10	13,001 11 8	1,363 12 9	...	
Jhánsi	...	909 4 6	909 4 6	1 12 6	1,267 8 0	1,269 4 6	360 0 0	...	
Lalitpur	...	581 12 0	581 12 0	...	581 12 0	581 12 0	...	...	
Bánda	...	3,779 9 6	3,779 9 6	...	3,779 9 6	3,779 9 6	...	...	
Total ...	...	59,345 9 8	59,345 9 8	7,506 4 9	62,650 8 11	70,156 13 8	10,811 4 0	...	
	TRANSACTIONS ADJUSTED FINALLY TO SERVICE HEADS.								
Naini Tal	64 10 8	...	64 10 8	...	(a) 64 10 8	64 10 8	...	...	(a) Written off as per Government Order No. 408, dated 25th May, 1881.
Ránikhet	1,229 3 3	3,721 13 6	4,951 0 9	...	1,229 3 3	1,229 3 3	...	3,721 13 6	
Total ...	1,293 13 11	3,721 13 6	5,015 11 5	...	1,293 13 11	1,293 13 11	...	3,721 13 6	
GRAND TOTAL ...	1,293 13 11	63,067 7 2	64,361 5 1	7,506 4 9	63,944 6 10	71,450 11 7	10,811 4 0	3,721 13 6	

CALCUTTA:
The 13th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 56.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Revenue received and outstandings on account of revenue during 1881-82.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction ...	...	...	...	...	...	...	
Naini Tal ...	Timber sales, grasing dues, and minor produce, &c., &c., &c.	...	33,633 8 6	33,633 8 6	33,282 15 9	350 8 9	
Kumaun ...	Ditto ditto ditto ...	...	1,94,438 9 11	1,94,438 9 11	1,94,438 9 11	...	Includes Rs. 5,926-7-7 received in advance.
Bánikhet ...	Ditto ditto ditto ...	655 14 0	45,110 3 7	45,766 1 7	45,765 13 7	0 4 0	
Garhwál ...	Ditto ditto ditto ...	...	1,19,484 9 1	1,19,484 9 1	1,19,484 9 1	...	Includes Rs. 3,500-0-0 received in advance.
Ganges ...	Ditto ditto ditto ...	...	82,667 15 9	82,667 15 9	82,667 15 9	...	Includes Rs. 9,019-14-11 received in advance.
Jhánsi ...	Ditto ditto ditto ...	...	4,860 0 4	4,860 0 4	4,860 0 4	...	
Lalitpur ...	Ditto ditto ditto ...	...	11,005 11 9	11,005 11 9	11,005 11 9	...	
Bánda ...	Ditto ditto ditto ...	...	14,651 13 1	14,651 13 1	12,531 10 7	2,120 2 6	
	Total ...	655 14 0	5,05,852 8 0	5,06,508 6 0	5,04,037 6 9	(a) 2,470 15 3	

	Rs. a. p.
(a) From Public Departments...	63 0 9
„ other purchasers ...	2,407 14 6
Total ...	2,470 15 3

CALCUTTA:
The 13th June, 1882.

A. L. HOME,
Asst. Comptroller-General (Forests).

FORM No. 57—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES.

Financial results of the year 1881-82.

Division.	*Timber and other produce removed from the forests by Government Agency.*		*Other revenue.*		*Formation, protection and improvement of forests.*	*Total.*		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Naini Tal	31,019	30,602	2,264	3,954	5,108	33,283	39,664	
Bánikhet	42,214	27,358	3,552	4,498	8,084	45,766	39,940	
Kumaun	49,812	38,617	1,44,627	26,817	31,293	1,94,439	96,727	
Garhwál	15,604	24,039	1,03,880	17,006	21,632	1,19,484	62,668	
Ganges	29,225	22,333	53,443	10,178	9,615	82,668	42,426	
Jhánsi	987	1,294	3,873	525	1,297	4,860	3,116	
Lalitpur	5,494	2,716	5,512	895	1,517	11,006	5,128	
Bánda	3,473	2,884	9,058	474	11,866	12,531	15,224	
Total ...	1,77,828	1,49,834	3,26,209	64,647	90,412	5,04,037	3,04,893	

NAINI TAL:
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle N.-W. P.

FORM No. 58.—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH WESTERN PROVINCES AND OUDH.

Trees felled by Government Agency during the year 1881-82. (*Selection fellings.*)

Division.	Trees felled. Description.	Number.	Remarks.
Naini Tal ...	Chir ...	696	For Commissariat fuel.
	Oak ...	71	
	Rhododendran ...	248	
	Miscellaneous ...	90	
	Chir ...	160	Burnt into charcoal.
	Oak ...	40	
	Chir ...	516	Sawn into scantlings.
	Miscellaneous ...	32	For burning lime for Maulani bungalow.
	Total ...	1,853	
Ránikhet ...	Chir ...	565	297 green, 268 dead, 132 " 4 " For Commissariat fuel.
	Oak ...	136	
	Miscellaneous ...	214	All green.
	Chir ...	1,168	All green—1,135 small trees for repair of fences and 32 small and 1 mature tree for repair of Government buildings.
	Total ...	2,083	
Kumaun ...	Sál ...	2,245	Converted into logs and scantlings.
	Sein ...	803	" " "
	Jamun ...	81	" " "
	Haldu ...	119	" " "
	Total ...	3,248	
Garhwál ...	Sál ...	287	Sawn into scantlings.
	Sein ...	2,002	
	Total ...	2,289	
Ganges ...	Sál ...	2	Sawn into scantlings.
	Sein ...	448	Ditto.
	Ash ...	2	Sold to Gun-carriage Factory, Fatehgarh.
	Deodar ...	861	Sawn into sleepers.
	Boxwood ...	330	Consigned to Messrs. Churchill & Sim, London, for sale.
	Miscellaneous ...	14,327	Made into ballis, ballas and tors, chiefly for the Northern Division, Ganges Canal.
	Total ...	15,970	
Jhánsi ...	Teak ...	77	Sold as ballis.
	Miscellaneous ... / Kardhai ...	410	
	Total ...	487	
Lalitpur ...	Miscellaneous, Seja ...	114	Ditto.
	Miscellaneous, Bel ...	20	
	Total ...	134	
	GRAND TOTAL ...	26,064	

Abstract.

Description of trees.	1st class above 6′ in girth.	2nd class 4½′—6′	3rd class 1½′—4½′	4th class under 1½′	Total of each kind of tree.	Total of c. ft.
Chir ...	425	762	1,768	150	3,105	1,26,291
Oak ...	70	102	70	5	247	20,918
Rhododendron ...	48	100	60	40	248	10,320
Sál ...	684	1,355	495	...	2,534	52,914
Sein ...	1,606	1,220	337	...	3,253	59,059
Deodar ...	861	...	...	...	861	77,490
Boxwood ...	...	...	330	...	330	2,041
Ash ...	...	...	2	...	2	11
Teak ...	...	...	...	77	77	128
Jamun ...	77	4	...	...	81	1,650
Haldu ...	90	28	1	...	119	2,352
Miscellaneous ...	249	290	6,123	8,545	15,207	74,389
Total ...	4,200	3,861	9,186	8,817	26,064	4,27,563

NAINI TAL :
The 22nd July, 1882.

G. GREIG,
Conservator, Central Circle.

FORM No. 59—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Outturn of timber and other produce cut and collected by Government Agency during the year 1881-82.

Division.	Produce cut and collected.				Remarks.
	How obtained.	Description.	Number or quantity.	Cubic feet.	
Naini Tal ...	Selection fellings ...	Chir logs	2,740	22,067	
	Ditto conversion,	„ karis	3,097	5,138	
	Ditto ditto ...	„ planks	23,374	12,536	
	Ditto ditto ...	„ scantlings ...	13	3	
		Total, timber ...	29,224	39,744	
	Selection fellings ...	Firewood	27,766	Mds.	
	Ditto ditto ...	Charcoal	7,130	Mds.	
Ránikhet ...	Ditto ditto ...	Chir planks	100	42	
	Ditto ditto ...	„ ballis and posts ...	1,584	7,585	
		Total, timber ...	1,684	7,627	Used by the department.
	Ditto ditto ...	Firewood	51,004	Mds.	
	Fallen wood ...	Ditto	71,803	Mds.	
		Total, firewood ...	1,22,807	Mds.	
Kumaun ...	Selection fellings ...	Sál logs	495	26,065	
	Ditto ditto ...	Haldu logs	4	156	
	Ditto ditto ...	Sal karis	12,209	19,926	
	Ditto ditto ...	Haldu do.	1,351	2,196	
	Ditto ditto ...	Sein do.	10,164	16,720	
	Ditto ditto ...	Jamun do.	1,023	1,651	
	Ditto ditto ...	Sal planks	30	40	
	Ditto ditto ...	„ joras	59	115	
	Clearance ...	„ logs	3	114	
	Ditto ...	„ karis	102	167	
	Ditto ...	Dhouri karis	2	3	
		Total, timber ...	25,442	67,153	
	Confiscated drift and waif wood.	Pieces	1,063	1,606	
		Firewood	10	Mds.	
		Bamboos	140	...	
		Wooden pots	8	...	
		Mats	16	...	
		Skin	1	...	
Garhwál ...	Selection felling ...	Sál karis	*a* 3,327	5,287	*a* Of these only 11,165 = 18,151 carried to depôt in 1881-82, and the expenditure charged to A. I.*a*.
	Ditto ditto ...	Sein do.	13,209	20,594	
	Ditto ditto ...	Sal scantlings ...	*b* 1,002	1,509	*b* These have been prepared for Dhikala Bungalow work and the expenditure charged to A. VII.*b*.
		Total, timber ...	17,538	27,390	
	Confiscated drift and waif wood.	Pieces	811	3,549	
Ganges ...	Selection felling ...	Sál ballis	2	10	
	Ditto ditto ...	Deodar sleepers ...	38,515	51,353	
	Ditto ditto ...	Sein karis	6,957	11,278	
	Ditto ditto ...	Kokat do.	5,936	9,653	
	Ditto ditto ...	Shisham and kokat scantlings.	11,049	18,889	
	Ditto ditto ...	Box wood pieces ...	524	642	
	Ditto ditto ...	Ash ditto ...	2	6	
		Total, timber ...	62,985	91,831	
	Confiscated drift and waif wood.	Pieces	1,301	2,848	
		Bamboos	300	...	
Jhánsi ...	Selection fellings ...	Miscellaneous ballis ...	487	811	
		Total, timber ...	487	811	

FORM No. 59—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Outturn of timber and other produce cut and collected by Government Agency during the year 1881-82—(concluded).

Division.	Produce cut and collected.				Remarks.
	How obtained.	Description.	Number or quantity.	Cubic feet.	
Jhánsi ...	Thinnings ...	Firewood	1,734	Mds.	
	Ditto ...	Charcoal	614	Mds.	
	Ditto ...	Bamboos	8,800	...	
	Ditto ...	Kiras	3,948	...	
	Ditto ...	Kurias	29,915	...	
Lalitpur ...	Selection fellings ...	Miscellaneous ballis ...	547	878	
		Total, timber ...	547	878	
	Clearance ...	Firewood	90	Mds.	
	Thinnings ...	Bamboos	11,78,406	...	
	Ditto ...	Kurias	2,71,592	...	
Bánda ...	Ditto ...	Miscellaneous ballis ...	20,516	30,774	
Miscellaneous pieces.	Ditto ...	Dandia	39	78	
	Ditto ...	Dhura	3,793	15,172	
	Ditto ...	Jot	11	11	
		Total, timber ...	24,359	46,035	
	Clearance ...	Firewood	21	Mds.	
	Thinnings ...	Bamboos	61,641	...	
		Hides	246	...	
		Lime	4,654	Mds.	
		Abstract of the Circle.			
		Sál logs	498	26,179	
		Haldu logs	4	156	
		Chir logs	2,740	22,067	
		Deodar sleepers ...	38,515	51,353	
		Sal karis	15,638	25,380	
		Haldu karis	1,351	2,196	
		Sein karis	30,330	48,592	
		Chir karis	3,097	5,138	
		Jamun karis	1,023	1,651	
		Dhouri karis	2	3	
		Kokat karis	5,936	9,653	
		Sál planks	30	40	
		Chir planks	23,474	12,578	
		Sál joras and ballis ...	61	125	
		Sal scantlings ...	1,002	1,509	
		Chir ditto ..	13	3	
		Chir, ballis, and posts...	1,584	7,585	
		Shisham and kokat scantlings.	11,049	18,889	
		Boxwood pieces ...	524	642	
		Ash pieces	2	6	
		Miscellaneous ballis ...	21,550	32,463	
	Miscellaneous pieces.	Dandia and Dhuras ...	3,832	15,250	
		Jot	11	11	
		Total, timber ...	162,266	2,81,469	
		Firewood	152,418	Mds.	
		Charcoal	7,744	Mds.	
		Bamboos	1,248,847	...	
		Kiras	3,948	...	
		Kurias	301,507	...	
		Hides	246	...	
		Lime	4,654	Mds.	
		Confiscated drift and waif wood.			
		Pieces	3,175	8,003	
		Firewood	10	Mds.	
		Bamboos	440	...	
		Wooden pots	8	...	
		Mats	16	...	
		Skin	1	...	

NAINI TAL:
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 60—(SUGGESTED).

FOREST DEPARTMENT, CENTRAL CIRCLE, N.-W. PROVINCES AND OUDH.

Timber and other produce received from forests in sale depôts during the year 1881-82.

Division.	Depôt.	Produce received. Description.	Number or quantity	Cubic feet.	Remarks.
Naini Tal ...	Naini Tal ...	Chir karis ...	35	54	
		Chir planks ...	181	72	
		Charcoal ...	7,130	Maunds.	
		Lime ...	1,544	Maunds.	
	Kahla ...	Chir karis ...	5,274	8,398	
		Chir planks ...	19,070	10,471	
Ranikhet ...	Ránikhet ...	Firewood ...	85,217	Maunds.	
	Chaubatia ...	Ditto ...	83,342	Maunds.	
Kamaun ...	Ramnagar ...	Sál logs ...	22	964	
		Haldu logs ...	4	156	
		Sál karis ...	10,615	17,009	
		Haldu karis ...	1,232	2,009	
		Sein karis ...	7,744	12,750	
		Jamun karis ...	1,117	1,796	
		Dhauri karis ...	28	44	
		Sál planks ...	30	40	
		Haldu planks ...	174	130	
		Sal joras ...	273	609	
	Chorgalia ...	Sál logs ...	375	16,528	
Garhwál ...	Saneli ...	Sein karis ...	21,497	36,279	
	Dhikala ...	Sál karis ...	3,327	5,287	
Ganges ...	Chila ...	Sál ballis ...	2	10	
		Sein karis ...	6,225	9,480	
		Kukat karis ...	1,746	2,795	
		Sisham and kukat scantlings ...	14,849	24,331	
	Lachmanjhulla ...	Sein karis ...	3,247	5,147	
		Kukat karis ...	1,185	1,882	
	Kauria ...	Sein karis ...	3,210	5,188	
		Kukat karis ...	3,862	6,305	
	Bhágirathi ...	Boxwood pieces ...	153	222	
		Ash pieces ...	2	6	
Jhánsi ...	Jhánsi ...	Miscellaneous ballis,	462	770	
		Firewood ...	1,237	Maunds.	
		Charcoal ...	614	Maunds.	
		Bamboos ...	8,800		
		Kiras ...	2,298		
		Kurias ...	22,441		
	Mau ...	Firewood ...	497	Maunds.	
		Kiras ...	1,650		
		Kurias ...	7,474		
Lalitpur ...	Lalitpur ...	Miscellaneous ballis,	69	106	
		Firewood ...	90	Maunds.	
		Bamboos ...	76,288		
	Talbahat ...	Miscellaneous ballis,	97	140	
		Bamboos ...	73,059		
	Marauria ...	Miscellaneous ballis,	343	517	
		Bamboos ...	62,074		
		Kuria ...	3,945		
	Sonraeo ...	Bamboos ...	32,729		
	Gonah ...	Bamboos ...	2,200		
Bánda ...	Manikpur ...	Miscellaneous ballis, dandia and dhura,	3,223	5,707	
		Bamboos ...	7,059		
		Lime ...	1,170	Maunds.	
		ABSTRACT OF THE CIRCLE.			
		Sál logs ...	397	17,492	
		Haldu logs ...	4	156	
		Sál karis ...	13,942	22,296	
		Haldu karis ...	1,232	2,009	
		Sein karis ...	41,923	68,944	
		Chir karis ...	5,312	8,452	
		Jamun karis ...	1,117	1,796	
		Dhauri karis ...	28	44	
		Kukat karis ...	6,793	10,980	
		Sál planks ...	30	40	
		Haldu planks ...	174	130	
		Chir planks ...	19,251	10,543	
		Sal, joras and ballis,	275	619	
		Sisham and kukat scantlings ...	14,849	24,331	
		Boxwood pieces ...	153	222	
		Ash pieces ...	2	6	
		Miscellaneous ballis dandia and dhura,	4,194	7,240	
		Total, timber ...	109,676	175,300	
		Firewood ...	120,383	Maunds.	
		Charcoal ...	7,744	Maunds.	
		Bamboos ...	262,209		
		Kiras ...	3,948		
		Kurias ...	33,860		
		Lime ...	2,714	Maunds.	

NAINI TAL,
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FROM No. 61—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Sales of timber and other produce cut and collected by Government Agency during the year 1881-82.

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	REMARKS.
		Sold from depôts			
Naini Tal ...	Naini Tal ...	Chir karis ...	10	14	
		Charcoal ...	7,075	Maunds.	
		Lime	977	Maunds.	
	Kahla ...	Chir karis ...	3,419	6 202	
		Chir planks ...	17,152	10,169	
Ránikhet ...	Ránikhet ...	Firewood ...	84,243	Maunds.	
	Chaubattia ...	Ditto ...	31,412	Maunds	
Kumaun ...	Ramnagar ...	Sál logs ...	114	5 407	
		Sál karis ...	12,245	19,229	
		Haldu karis ...	201	322	
		Sein karis ...	3,644	5,992	
		Jamun karis ...	826	1,300	
		Dhauri karis ...	49	78	
		Haldu planks ...	25	125	
		Sál joras ...	265	585	
Garhwál ...	Saneh ...	Sein karis ...	15,373	27,393	
Ganges ...	Chila ...	Sál ballis ...	2	10	
		Sein karis ...	8,366	12,817	
		Kukat karis ...	1,910	3,089	
		Sisham and kukat scantlings.	14,849	24,331	
	Lachmanjhula ...	Sein karis ...	3,239	5,140	
		Kukat karis ...	945	1,515	
	Kauria ...	Sein karis ...	810	1,358	
		Kukat karis ...	74	123	
	Bhágirathi ...	Boxwood ...	153	222	
		Ash	2	6	
Jhánsi ...	Jhánsi ...	Miscellaneous ballis,	720	1,755	
		Firewood ...	1,568	Maunds.	
		Charcoal ...	249	Ditto.	
		Bamboos ...	6,869	...	
		Kiras ...	2,566	...	
		Kurias ...	35,069	...	
	Mau ...	Firewood ...	544	Maunds.	
		Charcoal ...	171	Ditto.	
		Kiras ...	1,347	...	
		Kurias ...	7,915	...	
Lalitpur ...	Lalitpur ...	Miscellaneous ballis,	91	142	
		Firewood ...	90	Maunds.	
		Bamboos ...	66,026	...	
	Talbahat ...	Miscellaneous ballis,	217	320	
		Bamboos ...	72,102	...	
	Maraura ...	Miscellaneous ballis,	320	482	
		Bamboos ...	61,624	...	
		Kurias ...	2,750	...	
	Sonraee ...	Bamboos ...	32,729	...	
	Gonah ...	Bamboos ...	2,200	...	
Bánda ...	Manikpur ...	Miscellaneous ballis, dandia and dhura.	1,398	2,4 7	
		Bamboos ...	625	...	
		Lime ...	946	Maunds.	
	Karwi ...	Miscellaneous ballis, and dhura.	1,192	2,100	
		Sold locally.			
Naini Tal	Hinan ...	Chir scantlings ...	13	3	
	China ...	Firewood ...	7,458	Maunds.	
	Unani, jakar and Matiyala.	Firewood ...	19,141	Ditto.	
	Kalona ...	Firewood ...	7,082	Ditto.	

FROM No. 61—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Sales of timber and other produce cut and collected by Government Agency during the year 1881-82—(concluded).

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	REMARKS.
		Sold locally—(concld).			
Kumaun ...	Various ...	Confiscated, drift, and waif wood.	1,063	1,606	
		Firewood ...	10	Maunds.	
		Bamboos ...	140		
		Wooden pots ...	8		
		Mats ...	16		
		Hides ...	1		
Garhwál ...	Ditto ...	Confiscated, drift, and waif wood.	811	3,549	
		Firewood ...	80	Maunds.	
Ganges ...	Ganges river ...	Confiscated, drift, and waif wood.	1,301	2,848	
		Bamboos ...	300		
Lalitpur ...	Various ...	Miscellaneous ballis,	547	840	
		Bamboos ..	9,32,056		
		Kurias ...	2,67,647		
Rinda ...	Various ...	Miscellaneous ballis, dandia, dhura, and jot.	19,308	37,586	
		Firewood ...	21	Maunds.	
		Bamboos ...	44,142		
		Hides ...	246		
		Lime ...	3,465	Maunds.	
		ABSTRACT OF THE CIRCLE.			
		Sold from depôt.			
		Sál logs ...	114	5,407	
		Sál karis ...	12,245	19,229	
		Haldu karis ...	201	322	
		Sein do. ...	31,432	52,700	
		Chir do. ...	3,429	6,216	
		Jamun do. ...	826	1,300	
		Dhauri do. ...	49	78	
		Kukat do. ...	2,929	4,727	
		Haldú planks ...	252	125	
		Chir do, ..	17,152	10,169	
		Sal, joras, and ballis,	267	595	
		Sisham and kukat scantlings.	14,849	24,331	
		Boxwood pieces ...	153	222	
		Ash pieces ...	2	6	
		Miscellaneous ballis, dandia, and dhura.	3,938	7,266	
		Total, timber ...	87,838	132,693	
		Firewood ...	117,857	Maunds.	
		Charcoal ...	7,495	Ditto.	
		Bamboos ...	242,175		
		Kiras ...	3,913		
		Kurias ...	45,734		
		Lime ...	1,923	Maunds.	
		Sold locally.			
		Chir scantlings ...	13	3	
		Miscellaneous ballis, dandia, dhura, and jot.	19,855	38,426	
		Confiscated, drift, and waif wood.	3,175	8,003	
		Total, timber ...	23,043	46,432	
		Firewood ...	33,792	Maunds.	
		Bamboos ...	9,76,638		
		Kurias ...	267,647		
		Wooden pots ...	8		
		Mats ...	16		
		Hides ...	247		
		Lime ...	3,465	Maunds.	

NAINI TAL,
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

ANNUAL FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1881-82.

Particulars.		No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet
Balance at commencement of the year.					
Naini Tal Division	Chir karis	4,040	8,870		
	Chir planks	2,359	2,016	6,399	10,886
	Charcoal	7,106	Maunds.	7,106	Maunds.
Ránikhet ditto	...Firewood	1,096	Maunds.	1,096	Maunds.
Kumaun ditto	Sál logs	315	15,826		
	Sál karis	9,462	15,252		
	Haldú karis	103	163		
	Jamun karis	217	344		
	Dhauri karis	23	38		
	Haldú planks	333	158		
	Sál joras	2	3	10,455	31,784
Garhwál ditto	...Sein karis	6,044	11,170	6,044	11,170
Ganges ditto	Sein karis	2,141	3 337		
	Kukat karis	164	294	2,305	3,631
Jhánsi ditto	Miscellaneous ballis ...	416	1,248	416	1,248
	Firewood	1,200	Maunds.	1,200	Maunds.
	Charcoal	460	Ditto	460	Ditto
	Bamboos	3,204	...	3,204	
	Kiras	640	...	640	
	Kurias	19,865	...	19,865	
	Baskets	94	...	94	
Lalitpur ditto	Miscellaneous ballis ...	186	282	186	282
	Bamboos	7,706	...	7,706	
Total balance ...	Timber	...	...	25,805	59,001
	Firewood	...	...	2,296	Maunds.
	Charcoal	...	...	7,566	Ditto
	Bamboos	...	...	10,910	
	Kiras	...	...	640	
	Kurias	...	...	19,865	
	Baskets	...	...	94	

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Removed by purchasers from depôts.				
Sál logs	114	5,407		
Sál karis	12,245	19,229		
Hálcú karis	201	322		
Sein karis	31,432	59,700		
Chír karis	3,429	6,216		
Jamun karis	826	1,300		
Dhauri karis	49	78		
Kukat karis	2,929	4,727		
Haldú paluks	252	125		
Chír planks	17,152	10,169		
Sál, joras, and ballis	267	595		
Sisham and kukat scantlings	14,849	24,331		
Boxwood pieces	153	222		
Ash pieces	2	6		
Miscellaneous ballis, dandia, and dhúra ...	3,938	7,266	87,838	1,32,693
Firewood	117,857	Maunds.	117,857	Maunds.
Charcoal	7,495	Ditto	7,495	Ditto.
Bamboos	242,175	...	242,175	
Kiras	3,913	...	3,9 3	
Kurias	45,734	...	45,734	
Lime	1,923	Maunds.	1,923	Ditto.
Sold locally.				
Chír scantlings	13	3		
Miscellaneous ballis, dandia, dhúra and jot ...	19,855	38,426		
Chofiscated, drift and waifwood	3 175	8,003	23,043	46,432
Firewood	33,792	Maunds.	33,792	Maunds.
Bamboos	976,638	...	9,76,638	
Kurias	267,647	...	2,67,647	
Wooden pots	8	...	8	
Mats	16	...	16	
Hides	247	...	247	
Lime	3,465	Maunds.	3,465	Maunds.

ANNUAL FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the year 1881-82—(concluded.)

Particulars.	No or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Received from the Forests in Depôts.				
Sál logs	397	17,492		
Haldú logs	4	156		
Sál karis	13,942	22,296		
Haldú karis	1,232	2,009		
Sein karis	41,923	68,944		
Chír karis	5,312	8,452		
Jamun karis	1,117	1,796		
Dhauri karis	28	44		
Kukat karis	6,793	10,980		
Sál planks	30	40		
Haldú planks	174	130		
Chír planks	19,251	10,543		
Sál joras and ballis	275	619		
Sisham and kukat scantlings ...	14,849	24,331		
Boxwood pieces	153	222		
Ash pieces	2	6		
Miscellaneous ballis, dandia and dhúra ...	4,194	7,240		
			1,09,676	1,75,300
Firewood	1,20,383	Maunds.	1,20,383	Maunds.
Charcoal	7,744	Maunds.	7,744	Maunds.
Bamboos	2,62,209	...	2,62,209	
Kiras	3,948	...	3,948	
Kurias	33,860	...	33,860	
Lime	2,714	Maunds.	2,714	Maunds.
Received from the forests and sold locally.				
Chír scantings	13	3		
Miscellaneous ballis, dandia, dhúra and jot ...	19,855	38,426		
Confiscated, drift and waif wood	3,175	8,003		
			23,043	46,432
Firewood	33,792	Maunds.	33,792	Maunds.
Bamboos	9,76,638	...	9,76,638	
Kurias	2,67,647	...	2,67,647	
Wooden pots	8	...	8	
Mats	16	...	16	
Hides	247	...	247	
Lime	3,465	Maunds.	3,465	Maunds.

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
CONVERTED IN DEPOTS.				
LOST OR WRITTEN OFF AS USELESS.				
Used by the Department.				
Sál karis	40	55		
Chír karis	254	354		
Chír planks	1,226	728		
			1,520	1,137
Charcoal	867	Maunds.	867	Maunds.
Lime	132	Maunds.	132	Maunds.
Transferred to other Sale Depôts.				
Miscellaneous ballis and dhura	1,228	2,240		
			1,228	2,240
Balance at close of the year.				
Naini Tal Division. Chír karis	5,669	10,752		
Chír planks	3,232	1,662		
			8,901	12,414
Charcoal	6,294	Maunds.	6,294	Maunds.
Lime	435	Maunds.	435	Maunds.
Rainikhet ditto ...Firewood	* 4,000	Maunds.	4,000	Maunds.
Kumaun ditto Sál logs	598	27,911		
Haldú logs	4	156		
Sál karis	7,792	12,977		
Haldú karis	1,134	1,850		
Sein karis	4,100	6,758		
Jamun karis	508	840		
Dhauri karis	2	4		
Sál planks	30	40		
Haldú planks	255	163		
Sál joras	10	27		
			14,433	50,726
Garhwál ditto Sál karis	3,327	5,287		
Sein karis	12,168	20,056		
			15,495	25,343

RECEIVED BY CONVERSION IN DEPOTS.		...	...	...	...	Ganges ditto ...	Sein karis	2,408	3,937			
							Kukat karis	4,028	6,547	6,436	10,484
Received by transfer from Sale Depôts.						Jhánsi ditto ...	Miscellaneous ballis ...	158	263	158	263
Miscellaneous ballis and dhúra		1,228	2,240	1,228	2,240		Firewood	822	Maunds.	822	Maunds.
							Charcoal	654	Maunds.	654	Ditto
							Bamboos	5,135	...	5,135	
							Kiras	675	...	675	
							Kurias	6,796	...	6,796	
							Baskets	94	...	94	
						Lalitpur ditto ...	Miscellaneous ballis ...	67	101	67	101
							Bamboos	19,375	...	19,375	
							Kurias	1,195	...	1,195	
						Bánda ditto ...	Miscellaneous ballis and dhura.	633	1,140	633	1,140
							Bamboos	6,434	...	6,434	
							Lime	224	Maunds.	224	Maunds.
						Total balance ...	Timber	...	...	46,123	1,00,471
							Firewood	...	...	4,821	Maunds.
							Charcoal	...	...	6,948	Maunds.
							Bamboos	...	...	30,944	
							Kiras	...	...	675	
							Kurias	...	...	7,991	
							Basket	...	...	91	
							Lime	...	...	659	Maunds.
Total ...	Timber	...	...	1,59,752	2,82,973	Total ...	Timber	...	...	1,59,752	2,82,973
	Firewood	...	...	1,56,471	Maunds.		Firewood	...	...	1,56,471	Maunds.
	Charcoal	...	...	15,310	Maunds.		Charcoal	...	...	15,310	Maunds.
	Bamboos	...	...	12,49,757			Bamboos	...	...	12,49,757	
	Kiras	...	...	4,588			Kiras	...	...	4,588	
	Kurias	...	...	3,21,372			Kurias	...	...	3,21,372	
	Baskets	...	...	94			Baskets	...	...	94	
	Wooden pots	...	...	8			Wooden pots	...	...	8	
	Mats	...	...	16			Mats	...	...	16	
	Hides	...	...	247			Hides	...	...	247	
	Lime	...	...	6,179	Maunds.		Lime	...	...	6,179	Maunds.

NAINI TAL:
The 22nd July, 1882.

*Approximate balance unweighed in depôts,

G. GREIG,
Constr. of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 63.—(Suggested).

Forest Department, Central Circle, North-Western Provinces and Oudh.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82.

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	Remarks.
			Rs.	Rs.	
Naini Tal ...	Chír trees	c. ft. 48	3	3	
	Kokat wood	,, 5,431	263	263	
	Total, Timber ...	,, 5,479	266	266	
	Firewood	mds. 23	2	2	
	Firewood tickets 2,772 ...	,, 41,580	1,386	1,386	
	Chír tree for fuel 1 ...	,, 12	3	3	
	Total, Firewood ...	,, 41,615	1,391	1,391	
	Ghingaru sticks	...	5	5	
	Ringals—Head loads ...	201	25	25	
	Grazing	...	223	223	
	Other minor produce ...	...	96	96	
	Total Revenue under II. ...	...	2,006	2,006	
Ránikhet ...	Chír trees	14,736	1,055	1,055	
	Charpoys	198	12	12	
	Firewood	mds. 100	9	9	
	Do. for squatters ...	,, 4,500	289	289	
	Total, Firewood ...	,, 4,600	298	298	
	Grazing	...	701	701	
	Other minor produce ...	...	1,224	1,224	
	Total Revenue under II. ...	...	3,290	3,290	
Kumaun ...	Sal logs	c.ft. 110,112	55,098	55,098	
	Haldu ,, ...	,, 64,937	12,176	12,176	
	Sein ,, ...	,, 505	126	126	
	Jaman ,, ...	,, 476	119	119	
	Shisham ,, ...	,, 37,038	1,389	1,389	
	Tun ,, ...	,, 2,373	890	890	
	Sandan ,, ...	,, 602	226	226	
	Khair ,, ...	,, 85,195	31,949	31,949	
	Total, Logs ...	,, 301,238	1,01,973	1,01,973	
	Firewood	mds. 46,328	5,791	5,791	
	Bamboos	220,960	11,291	11,291	
	Grazing	...	8,689	8,689	
	Other minor produce ...	...	15,794	15,794	
	Total Revenue under II. ...	...	1,43,538	1,43,538	
Garhwál ...	Sal logs	c. ft. 85,704	45,884	45,884	
	Sein ,, ...	,, 3,783	779	779	
	Shisham ,, ...	,, 1,005	315	315	
	Tun ,, ...	,, 975	305	305	
	Sandan ,, ...	,, 6,837	2,137	2,137	
	Katrukh ,, ...	,, 17,643	591	591	
	Khair ,, ...	,, 31,417	15,767	15,767	
	Total, Logs ...	,, 147,364	65,778	65,778	
	Firewood	mds. 43,920	913	913	
	Bamboos	,, 8,045,307	27,034	27,034	
	Grazing	...	2,398	2,398	
	Other minor produce ...	...	6,303	6,303	
	Total Revenue under II. ...	...	1,02,426	1,02,426	

FORM No. 63.—(Suggested).

Forest Department, Central Circle, North-Western Provinces and Oudh.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82—(continued.)

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	Remarks.
			Rs.	Rs.	
Ganges ...	Sál logs	c. ft. 13,645	5,156	5,156	
	Sein "	" 17,338	3,251	3,251	
	Shisham "	" 1,026	321	321	
	Kokat "	" 2,311	339	339	
	Deodar "	" 716	94	94	
	Simal "	" 4,800	141	141	
	Sandan "	" 1,491	466	466	
	Gosam "	" 3,243	1,013	1,013	
	Kolair "	" 2,770	277	277	
	Total, Logs ...	" 47,340	11,058	11,058	
	Firewood	mds. 22,454	779	779	
	Bamboos	10,913,768	36,643	36,643	
	Grazing	...	1,632	1,632	
	Other minor produce ...	...	2,403	2,403	
	Total Revenue under II. ...	...	52,515	52,515	
Jhánsi ...	Miscellaneous ballis ...	c. ft. 264	29	29	
	Firewood	mds. 1,729	61	61	
	Do. contract, &c. ...	...	252	252	
	Charcoal	mds. 157	52	52	
	Bamboos	8	1	1	
	Grazing	...	2,771	2,771	
	Other minor produce* ...	...	660	660	*Includes 128 kiras and 91,540 kurias, the rest of the minor produce consists of articles too insignificant and numerous to detail.
	Total Revenue under II. ...	...	3,826	3,826	
Lalitpur ...	Miscellaneous ballis ...	c. ft. 21,661	912	912	
	Nim tree	" 10	1	1	
	Kurias	No. 20,200	50	50	
	Firewood	mds. 7,840	98	98	
	Bamboos	354,238	886	886	
	Grazing	...	2,233	2,233	
	Other minor produce ...	...	1,332	1,332	
	Total, Revenue under II. ...	...	5,512	5,512	
Bánda ...	Firewood	...	220	70	
	Grazing	...	2,771	2,728	
	Other minor produce ...	...	4,414	3,292	
	Total Revenue under II. ...	...	7,405	6,090	
	Total Revenue of the circle under II.	...	3,20,518	3,19,203	

FORM No. 63.—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82—(concluded.)

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	REMARKS.
	ABSTRACT OF THE CIRCLE.				
			Rs.	Rs.	
	Sál logs	c. ft. 209,461	1,06,138	1,06,138	
	Haldu "	" 64,937	12,176	12,176	
	Sein "	" 21,626	4,156	4,156	
	Chir "	" 14,784	1,058	1,058	
	Jamun "	" 476	119	119	
	Shisham and kokat logs ...	" 41,380	2,364	2,364	
	Tun logs	" 3,348	1,195	1,195	
	Simal "	" 4,800	141	141	
	Deodar "	" 716	94	94	
	Sandan "	" 8,930	2829	2829	
	Katrukh "	" 17,643	591	591	
	Gosam "	" 3,243	1,013	1,013	
	Kolair "	" 2,770	277	277	
	Khair "	" 116,612	47,716	47,716	
	Miscellaneous poles ...	" 5,431	263	263	
	Do. Ballis ...	" 21,925	941	941	
	Nim tree	" 10	1	1	
	Total ...	" 538,092	1,81,072	1,81,072	
	Charpoys	No. 198	12	12	
	Ghingaru sticks	...	5	5	
	Kurias	20,200	50	50	
	Firewood	mds 1,68,486	9,798	9,648	
	Charcoal	" 157	52	52	
	Ghingaru sticks	...	5	5	
	Bamboos	19534,281	75,855	75,855	
	Ringals— Head loads ...	201	25	25	
	Grazing	...	21,418	21,375	
	Other minor produce* ...	...	32,226	31,104	*Includes 128 kiras and 91,540 kurias, the rest of the minor produce consists of articles too insignificant and numerous to detail.
	Total Revenue of the circle under II.	...	3,20,518	3,19,203	

NAINI TAL:
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, C. C., N-W-P, and Oudh.

FORM No. 64—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1881-82.

Name of Department.	Particulars of supplies.	Amount supplied	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost to Forest Department. Timber expenses under A.I	Cost to Forest Department. Quota of all other expenditure chargeable against timber, &c	Cost to Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.	Remarks.
		′ ″ ″			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		
Public Works Department ... Military Works ... Naini Tal ... Sub-Division ...	Chir karis	2— 8 × 9×6	1 14 0	Each ...	4 0 0	651 0 0	...	9872 0 0	2,000 0 0	11,872 0 0	1,843 0 0	...	
	Ditto	2— 9 × 6×3	0 9 0	„ ...	1 0 0								
	Ditto	2—10 × 9×6	2 6 0	„ ...	5 0 0								
	Ditto	4—11 × 5×3	0 9 6	„ ...	2 0 0								
	Ditto	9—12 × 9×6	2 13 0	„ ...	25 0 0								
	Ditto	3—13 × 5×3	0 11 6	„ ...	2 0 0								
	Ditto	1—13 × 6×4	1 3 0	„ ...	1 0 0								
	Ditto	1—14 × 9×6	3 5 0	„ ...	3 0 0								
	Ditto	7—15 × 5×3	0 13 6	„ ...	6 0 0								
	Ditto	6—15 × 6×4	1 6 0	„ ...	8 0 0								
	Ditto	60—16 × 6×4	1 8 0	„ ...	90 0 0								
	Ditto	2—17 × 6×4	1 9 0	„ ...	3 0 0								
	Ditto	20—18 × 4×3	0 14 0	„ ...	18 0 0								
	Chir planks	156— 8¼ × 6×2	0 7 0	„ ...	68 0 0								
	Ditto	3—10 × 6×1	30 0 0	100	1 0 0								
	Ditto	46—12¼ × 6×2	0 11 0	Each ...	32 0 0								
	Ditto	26—12¼ × 6×1½	0 9 0	„ ...	15 0 0								
	Ditto	5—12¼ × 12×1½	1 1 0	„ ...	5 0 0								
	Ditto	105—16 × 12×2	1 14 0	„ ...	197 0 0								
	Ditto	47—24 × 11×2	3 8 0	„ ...	165 0 0								
Public Works Department, Provincial Works, Naini Tal Sub-Division.	Chir karis	24— 16 × 6×4	1 8 0	„ ...	35 0 0	202 0 0	...						
	Ditto	3—16 × 8×5	2 8 0	„ ...	8 0 0								
	Ditto	10—18 × 6×4	1 11 0	„ ...	17 0 0								
	Ditto	2—20 × 6×4	2 2 0	„ ...	4 0 0								
	Ditto	2—20 × 9×6	5 2 0	„ ...	10 0 0								
	Ditto	6—22 × 7×5	3 11 0	„ ...	22 0 0								
	Ditto	12—22 × 7¾ × 5¼	5 8 0	„ ...	66 0 0								
	Chir planks	50—10 × 6×1	25 0 0	100	13 0 0								
	Ditto	49—12 × 12×1	54 0 0	100	26 0 0								
	Chir karis	2—12 × 13×7	5 11 0	Each ...	11 0 0	...	63 0 0	...	...	...	...	...	
	Chir planks	30—10½ × 12×2	1 2 0	„ ...	34 0 0								
	Ditto	16—12 × 12×2	112 0 0	100	18 0 0								

FORM No. 64—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1881-82.

Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Outstanding.	Cost to Forest Department. Timber expenses under A.I.	Cost to Forest Department. Quota of all other expenditure chargeable against timber, &c.	Cost to Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.	Remarks.
			Rs. a. p	Rs.	Rs. a. p	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a p.	Rs. a. p.	Rs. a. p.	
Commissariat Department, Naini Tal.	Firewood	Mds. 33,681	38 0 0	Mds. 100	12,799 0 0	12,799 0 0	...	...	...	...	...	...	
Commissariat Department, Ránikhet.	Firewood.	Mds. 1,15,665	36 8 0	Mds. 100	42,214 0 0	42,214 0 0	...	22,885 0 0	2,964 0 0	25,849 0 0	16,365 0 0	...	
Public Works Department, Northern Division, Ganges Canal.	Sisham and kukat ballas ... Ditto ballis ... Ditto tors ...	911 = 5,616 2,664 = 3,933 10,474 = 14,305	40 0 0 10 0 0 Various.	Score ... " ... 	1,822 0 0 1,332 0 0 3,906 0 0	1,822 0 0 1,332 0 0 3,906 0 0	... ...	2368 0 0					
Public Works Department. Provincial Works, Meerut Division.	Sál ballis	2 = 10	2 15 9	Each ...	6 0 0	6 0 0	...	3 0 0	172 0 0	2,563 0 0	4,523 0 0	...	
Military Department, Gun Carriage Factory, Fatehgarh.	Ash pieces	2 = 6	3 3 11	c. ft.	20 0 0	20 0 0	...	20 0 0					
		Total ...	...	...	63,015 0 0	62,952 0 0	63 0 0	35,148 0 0	5,136 0 0	40,284 0 0	22,731 0 0	...	
									Deduct surplus (or deficit) ...		...	...	
									Balance for (or against) the Department ...		22,731 0 0	...	

NAINI TAL :

The 22nd July, 1882.

G. GREIG,

Conservator of Forests, Central Circle,

N.-W. P. and Oudh.

FORM No. 65—(SUGGESTED.)

FOREST DEPARTMENT, CENTRAL CIRCLE NORTH-WESTERN PROVINCES AND OUDH.

Abstract showing the value of timber and other produce at sale depôts for the year 1881-82.

Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
	Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favor of the year.	Against the year.
Timber.			Rs.			Rs.		
Sál logs	315	15,826	28,745	598	27,911	41,868	...	...
Haldu logs	...	...	...	4	156	78	...	...
Sál karis	9,462	15,252	11,782	11,119	18,264	23,076	...	...
Haldu karis	103	163	81	1,134	1,850	925	...	...
Sem karis	8,185	14,507	8,177	18,676	30 751	17,075	...	...
Chir karis	6 683	12,760	7,179	5,669	10,752	6,720	...	...
Jamun karis	217	344	172	508	840	420	...	...
Dhauri karis	23	38	16	2	4	2	...	...
Kokat kari	164	294	75	4,028	6,547	1,964	...	...
Sál planks	...	...	...	30	40	60	...	...
Chir planks	4,503	3,270	1,864	3,232	1,662	1,039	...	...
Haldu planks... ...	333	158	78	255	163	81	...	...
Sál joras	2	3	5	10	27	47	...	...
Miscellaneous ballis ...	602	1,530	81	782	1,200	91	...	...
Dhuras	...	...	...	76	350	7	...	...
Total, Timber ...	30,592	64,145	58,258	46,123	1,00,517	93,453	35,195	...
Firewood and charcoal.								
Firewood	2,296	Maunds	544	4,822	Maunds	1,574	...	...
Charcoal	7,566	"	7,290	6 948	"	6,568	...	...
Bamboos	10,910	Number	86	50,944	Number	224	...	...
Kiras	640	"	40	675	"	42	...	...
Kurias	19,865	"	113	7,991	"	18	...	...
Baskets	94	"	3	94	"	3	...	...
Lime	...	...	...	659	Maunds	353	...	...
Total, fuel, &c. ...	...	...	8,076	...	...	8,782	706	...
Total ...	...	...	66,334	...	...	1,02,235	35,901	...

Net difference in favor of the year, Rs. 35,901.

NAINI TAL :
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

FORM No. 65.

FOREST DEPARTMENT, CENTRAL CIRCLE, NORTH-WESTERN PROVINCES AND OUDH.

Abstract showing the value of live and dead stock for the year 1881-82.

Description of live and dead stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in value.	
	Number.	Value.	Number.	Value.	In favor of the year.	Against the year.
Live stock.		Rs.		Rs.		
Elephants	8	14,000	9	14,500	...	...
Bullocks	30	483	32	523	...	...
Total, live stock ...	38	14,483	41	15,023	540	...
Dead stock.						
Buildings	50	54,326	60	56,792	...	...
Sheds	2	16	2	16	...	...
Tools and plants ...	26,240	18,449	27,791	20,972	...	...
Carts	15	293	17	331	...	...
Almira	1	70	1	70	...	...
Gunpowder barrels ...	5	429	5	429	...	...
Ditto loose lbs. ...	106	106	84	84	...	...
Slow match barrels ...	3	260	3	260	...	...
Miscellaneous qrts. ...	6	...	6	...	...	...
Ditto lbs. ...	9	...	9	...	...	...
Total, dead stock ...	26,437	73,949	27,978	78,954	5,005	...
Total ...	...	88,432	...	93,977	5,545	...

Net difference in favor of the year, Rs. 5,545.

NAINI TAL :
The 22nd July, 1882.

G. GREIG,
Conservator of Forests, Central Circle, N.-W. P. and Oudh.

APPENDIX.

No. 51, dated Naini Tal, the 9th August, 1882.

From—G. GREIG, ESQ., *Conservator of Forests, Central Circle, N.-W. P. and Oudh,*

To—*Secretary to Govt., N-W. P. and Oudh, in the Rev. Dept., Forests Branch.*

SIR,—Since sending the annual report for 1881-82 for this Circle to Press, the "Review of the forest administration in the several provinces under the Government of India for the year 1880-81" has been received in this office, and, with reference to para .67 of that Review, I have the honor to submit the following information for the year 1881-82, which can be attached to the 1881-82 report as an appendix :—

Particulars.	Receipts.	Charges.	Surplus.	Deficit.
	Rs.	Rs.	Rs.	Rs.
I.—Departmental timber operations	1,77,828	1,49,834	27,994	...
II.—Other revenue	3,26,209	64,647	2,61,562	...
III.—Formation, protection, and improvement of the forests.	...	90,412	...	90,412
Total ...	5,04,037	3,04,893	2,89,556	90,412

The quantities of timber and other produce worked out by Government agency compare as follows with those removed by purchasers :—

Description of material.		Removed by Government agency.	Removed by private parties.
Timber	C. ft.	179,125	538,092
Firewood and charcoal	Mds.	1,59,144	1,68,643
Other items, as bamboos and grazing and fodder grass, &c.	Rs.	7,294	1,28,359

Deducting the last two items from the surplus given in the statement preceding the above table, the financial results as regards the removal of timber and firewood may be represented as follows :—

	Material removed.		Surplus of receipts over charges.
	Timber.	Firewood.	
	Cubic feet.	Maunds.	Rs.
Government agency	1,79,125	1,59,144	20,700
Private enterprise	5,38,092	1,68,643	1,33,203

Whilst the amount of timber removed by private enterprise is only three times as much as that sold by Government agency, and the amount of firewood and charcoal very nearly the same in either case, the surplus of receipts over charges from private enterprise is very nearly seven times as much as the surplus from Government agency.

No. 39L.G., dated Naini Tal, the 1st August, 1882.

From—CAPTAIN E. S. WOOD, *Conservator of Forests, N.-W. P. and Oudh, Oudh Circle;*

To—*Secy. to Govt., N.-W. Provinces and Oudh, Revenue (Forests) Dept.*

SIR,—In forwarding the Annual Report of Forest Administration for the Oudh Circle for 1881-82, and with reference to orders as per margin, I have the honor to make the following remarks :—

(*a*)—*No.* 221 *of* 28*th March*, 1882.
From Secretary to Government, North-Western Provinces and Oudh, Revenue (Forests) Department, to Conservator, Oudh Circle.
(*b*)—*No.* 210*F. of* 6*th March*, 1882.
From Secretary to Government of India, Home Department, to Secretary to Government, North-Western Provinces and Oudh, Revenue (Forests) Department.
(*c*)—*No.* 823, *dated* 16*th November*, 1881.
From Secretary to Government, North-Western Provinces and Oudh, Revenue (Forests) Department, to the Secretary to Government of India, Home Department.

2. Para. 3(*a*) and paras. 3 and 4(*b*).—Only a small addition has been made to the fire conservancy area. There is no land suited for deodar in the Oudh Circle, and for reasons given in the report there is no immediate necessity for planting sál on a large scale. The only trees which it is at present advisable to cultivate on a large scale are trees that can be raised in the large savannahs which are now but scantly covered with sissu, khair, and their associates, and I have recorded rather fully the operations connected with the artificial cultivation of sissu for future guidance, and I trust for the benefit of others who may have to carry on the same or similar work.

3. Para. 4(*c*) and last clause of para. 6(*b*).—In para. 55 I have given the average of the cubical contents of each class of tree.

4. As regards the remarks, paras. 8, 9, 10, and 12(*c*), I would beg leave to point out that old form 53 merely shows the number of trees felled ; old form 54, the logs, sleepers and other scantlings cut and exported. Other produce as firewood, canoes, and other produce is not included. It showed the work of cutting and exporting to the different depôts ; that form 55 showed the timber and *other produce* brought to depôt from the *different Forest Divisions.*

In old form 55 the sál logs (2,074) are shown in form 54 as carted : to Suthiana 467, to Dudua 2,588, Dumuhani 19 ; total 2,074. Six asna logs in form 55 are shown in form 54, carted to Suthiana 6. In form 55 Khairigarh 34, sál logs carted to Khairigarh 34, and in the same way in Gorakhpur at Sonari are shown as sold 144 logs ; all the rest shows expenditure and transfers to different depôts. It will, I think, be seen from the foregoing remarks that fuel and charcoal ought not to have been shown in form 54, and the footnote of form 55 shows that certain timber and fuel was got from the river and not *from Forest Divisions.* There are slight misprints in the end of 1st clause of para. 12(*c*).

5. I had in former reports referred to the free produce in Bahraich, but no notice was taken of the matter.

I have now from pretty accurate returns for Kheri, Bahraich and Gonda, five sub-divisions, estimated the quantity for the two other sub-divisions, Bhira and Pilibhít. The actual number of the smaller trees has also had to be calculated as they are not given by the score or hundred, but by the cart-load, and it will be seen that the number of smaller trees is very great.

6. Para. 26 (*c*).—It will be seen that some of the arrears of grazing dues have been realized in Bahraich. The case is now with the Deputy Commissioner, and when the returns come of what he considers irrecoverable balances, the same will be sent up for the orders of Government.

7. I have to regret the delay in submitting the report, but the time taken in compiling the varied information and statements has been longer than I expected.

E. S. WOOD, CAPTAIN,

Conservator of Forests, N.-W. P. and Oudh,
Oudh Circle.

OUDH CIRCLE.

N.-W. PROVINCES AND OUDH.

ANNUAL PROGRESS REPORT

OF

FOREST ADMINISTRATION

FOR THE YEAR ENDING 31st MARCH, 1882.

By Captain E. S. Wood, Conservator of Forests, Oudh Circle.

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CHAPTER I.

I.—SUMMARY OF ADMINISTRATION DURING THE YEAR.

I commenced my inspection early in November, 1881, with Bahramghat, joining camp at Baheri, and proceeding through Pilibhít, Bhira, Kheri (trans-Sárda) to Bahraich. I left the Government forests to see the Ikonah forests of the Mahárája of Kapurthala, which Mr. Rebsch (in charge of the Gonda Division), by the orders of Government, was inspecting, demarcating, and re-organising. As Mr. Rebsch could not accompany me through his own Division, I did not visit Gonda, but proceeded to Gorakhpur and made final visits to Bahramghát, Bhira, Kheri (trans-Sárda), and Pilibhít, arriving in Naini Tal early in May, 1882.

2. The various charges with the officers in charge are given below :—

Charges.	Officer in charge.	Remarks.
Oudh Circle	Captain Wood ...	Whole year.
Divisions.		
Pilibhít	Mr. Ponsonby ...	Ditto.
Bhira (Kheri sub-division) ...	Ditto ...	Ditto.
Kheri (trans-Sárda), two sub-divisions.	Mr. Allan	Ditto, except 3 months' privilege leave.
Bahramghát	Babu Kanhaya Lal ...	Whole year.
Bahraich (two sub-divisions),	Mr. Pinder	Mr. Dansey joined for about two months, before going on furlough, when he had charge of the Division.
Gonda	Mr. Rebsch	Whole year.
Gorakhpur	Mr. Campbell	Whole year. (Attended Dehra Forest School, Mr. Rebsch carrying on office work).
	Mr. Battie	Mr. Battie was attached to Bahraich till Mr. Dansey arrived ; he then assisted in Bhira till Mr. Allan went on leave, when he took charge of the Division for three months, remaining attached to the Kheri Division (trans-Sarda) till the end of the year.

Mr. Rebsch, in addition to his own duties, proceeded to Ikonah in the end of January, and the work did not allow of his inspecting his own Division till after the end of the financial year.

3. The system of subordinating the Forest Officers to the District Officers continued to work well, the latter having helped the Forest Officers in many ways.

4. The report of the Inspector-General of Forests on the Oudh and North-Western Provinces, Forests was received in March, 1882. For Oudh there are no very important suggestions, except that in Kheri trans-Sarda he approves of 2,500 trees being felled instead of 2,000, to which we had been formerly limited. The 2,500 with the other trees that he approves of felling really make up the number to 3,000 trees which were formerly allowed to be felled, and which number I have always maintained is well within the limit of the annual yield—in fact, with a proper market we could fell many more trees with benefit to the forests.

5. During the year the forests protected from fire were as a necessary precaution gazetted as closed against hunting, fishing, and shooting from the commencement of fire-conservancy till the setting in of the rains.

SECTION I.—AREA AND BOUNDARIES.

6. The area has been increased by a little under 11 square miles, being 1,090 as compared with 1,079 square miles at the commencement of the year. The addition has been in the Nawábganj forests of Gonda. The lands exchanged for the Hardoi grants have not yet been gazetted, as the final orders of Government have not been issued, the title-deeds only having lately been received from the former grantee. The intention of the Government to form into reserved forests in Gorakhpur the grass lands enclosed by and adjoining the Government forests has been gazetted ; some claims remain to be settled by the Collector ; in the parts near the forests where the presence of the settlers would endanger the safety of the fire-protected forests, I propose paying compensation and getting rid of them, but where the lands lie enclosed by or adjoin forest that will be principally kept for grazing I propose that the settlers be allowed to stay and hold such land as they may legally and properly be entitled to.

7. The area given is only approximate, but in next year's report, with the aid of the Agricultural Department, and that of the Forest Survey Department, I hope to give exact figures.

8. The accompanying statement shows the progress made in boundary works :—

Divisions.	Miles demarcated.	Miles new ditching.	Miles broad boundary cleared.	Number of posts erected.
Pilibhít	About 2	9¾	...	...
Bhira (sub-division) ...	...	13¾	10½	...
Kheri	...	1	12½	...
Bahraich	...	76¾	4	1,509
Gonda	...	...	...	...
Gorakhpur	...	...	...	...
Total ...	About 2	101¼	27	1,509

9. As desired in the last part of penultimate clause of para. 1 of Resolution No. 819 of the 14th November, 1881, orders of the Government on the report for 1880-81, I beg to state that, with the exception of Gorakhpur, the boundaries of all the other forests are now laid down with posts or pillars, with in most places "*daghbels*" between the posts or pillars ; and that ditching is being gradually carried on where practicable, except in land situated within the forests trans-Sárda, about which there is at present a suit in the civil court.

SECTION II.—PROTECTION AND IMPROVEMENT.

10. The results of prosecutions for breach of forest rules are as below :—

Divisions.	Prosecutions.	Convictions.		Acquittals.		Pending.
	New cases of the year.	Cases.	Persons.	Cases.	Persons.	
Pilibhít	1	1	5	...	...	...
Bhira (sub-division)	...	...	...	...	...	...
Kheri	7	5	7	1	1	1
Bahramghát	1	1	1	1	1	...
Bahraich	40	30	47	9	16	1
Gonda	17	15	65	...	...	2
Gorakhpur	5	2	2	3	3	...
Total ...	71	54	127	14	21	4

Crime was most frequent in Bahraich and Gonda, where the forests in many places are nearly surrounded by cultivation. As the cases in the year are few, I think it would be advisable, when possible, to have the cases tried by an European Magistrate. The cases have generally been of unauthorized felling (another name for stealing) and lopping for cattle fodder.

11. The works of protection and improvement, other than the above, are given in the order they come in the budget under the heads "A.VII." and "A.VIII."

12. (*a*) *Roads and Bridges.*—About 60 miles of new roads were made. The most important new roads (24½ miles) were made to open out the Gabbapur forests, between Bhagoratal and Sohelwa, in the north-east corner of the Bahraich district; 735 miles of old roads were kept in order, repaired and improved; five new bridges have been made, 38 repaired, and 34 nála banks sloped to allow of traffic. The cost was Rs. 11,795-10-8.

13. (*b*) *Buildings.*—The following list shows the rest-houses completed and in progress in the year:—

	1st class double-storied.	1st class single-storied.	2nd class double-storied.	2nd class single-storied.	3rd class single-storied.	Total.
Completed	1	2	1	2	6	12
In progress	2	..	1	2	1	6
Total ...	3	2	2	4	7	18

Besides these eight permanent lines of out-houses have been built for servants and subordinates, foresters' temporary houses have been repaired, and additions made to the inferior rest-houses. The cost was Rs. 21,291-3-7.

14. (*c*) *Other works, (wells, rivers, &c.)*—The Soheli was cleared of snags as usual. Nineteen new masonry wells have been completed, six are in progress, and 44 wells have been cleared out. The cost was Rs. 2,972-4-7.

15. The total expenditure under A.VII., Communications and Buildings, was Rs. 36,059-2-10.

16. (*a*[1]) *Demarcation.*—The progress is shewn under Section I. Twenty-seven miles of broad boundary were cleared, over 100 miles of ditching were done, and over 1,500 posts erected; the cost being Rs. 3,897-15-2.

17. (*b*[1]) *Compensation for land and rights.*—But little money was spent, the greater amount being for a site for a rest-house at Bhira. The whole cost was Rs. 21-15-6.

18. (*c*[1]) *Surveys and working plans.*—The cost has been only Rs 81-9-3. Measurements of about one thousand trees have been made three times in the year, —*viz.*, in March, December, and June—to ascertain the growth of sál. The measurements were taken in Pilibhít, Bhira, Kheri (trans-Sárda), Bahraich, and Gorakhpur. In Pilibhít the growth, young growth from old stools, has been very rapid; in Bhira poles from old stools show a slower growth. The large trees in Kheri still give the same magnificent growth, showing what dominant trees in good soil can do; the growth of the smaller trees has also been good. Bahraich still shows the same slow growth as last year, only about half of Kheri; the parts under ground will be examined next cold weather. The growth of Gorakhpur is fairly good. The probabilities are that where the growth of the young poles is good as in Kheri, that the trees are of seedling growth and not from roots that have frequently been coppiced. The same fact was elicited as last year, *viz.*, that nearly the whole growth is made from June to December, and little, if any, between December and June. At the suggestion of the Inspector-General of Forests some larger blocks were taken up, but experience has shown that more trees must be cut out to show what forests in an improved state can do, as many trees remaining are evidently suppressed. I have been able to gather some facts regarding the growth of trees of known age: they are in Lucknow, Bareilly, and Kuch Bihár.

19. *Lucknow trees.*—In August, 1867, I measured a tree in the Horticultural Gardens, Lucknow, girth at 3 feet from the ground 1′3″, tree stunted, about 12 feet high. I noticed some sickly seedlings two years old; I have constantly visited the trees and watched their growth, and Mr. Ridley, the Superintendent of the gardens, kindly measured them for me in the month of June, 1882; the largest tree at 3 feet from the ground is now 3′4″ in girth, and the height about 45 feet. The difference between the time of measurement is a little less than 15 years, the difference in girth is 2′1″, and the difference in radius 6″·37—2″·38=say 4 inches in 15 years, or 3¾ years per inch of radius. The other four trees were not 6 feet high in 1867. The trees were measured at 6 feet from the ground in June, 1882, and were of the following dimensions and growth :—

	Girth.	Radius.	Radius, without bark.	Years per inch of radius for 15 years.
No. 1	3′·3″	6″·21	5″·71	2″·62
No. 2	2′·10″	5″·41	4″·91	3″·05
No. 3	3′·1″	5″·89	5″·39	2″·78
No. 4	2′·11″	5″·57	5″·07	2″·95
Average ...	3′·0″·25	5″·77	5″·27	2″·85

But as they had not reached 6 feet in height in 1867, the growth was quicker than 2·85 years per inch of radius: two and a half years would be nearer the truth. These trees are in rich sandy soil, and have the benefit of manure and irrigation and have plenty of room round them.

20. *Bareilly Public Gardens.*—I had noticed a number of sál saplings in the public gardens in 1864, but could not ascertain their age; Mr. Ponsonby has now ascertained from Mr. Fleetwood Williams, C.S.I., who has so long been associated with Rohilkhand, that the trees were planted in 1840, being now 42 years old. The trees were evidently planted pretty close together. Many have however died. They are not cultivated now, but may have been at first, and are like a portion of natural forest. The large trees are separate from the bulk of the rest. Twenty-three trees were measured at Mr. Ponsonby's request by Mr. T. Stoker, the Officiating Joint Magistrate of Bareilly in the month of July, 1882; the largest tree has a girth at 5 feet from

the ground of 5′2⅝″, the smallest 2′11⅜″. The average of the 23 trees is 3′11⅛″ girth, or 7½ inches radius with bark, or say 6½ inches without bark. As these trees would not be 5 feet high probably for over three years, the growth at 5 feet high may be taken as 39 years, or six years per inch of radius. This is the average; the largest tree has grown at the rate of 4½ years per inch of radius, calculating in the same manner, and the smallest, in a way suppressed, less than 8½ years per inch of radius.

21. *Kuch Bihár, Bengal.*—In the *Indian Forester* for July, 1881, is an article on plantations in Kuch Bihár by a writer signing himself "W. R. F." He says:—

"There is also a small sál plantation, which was made in 1874-75 by planting out at distances of 7 feet seedlings about 18 inches in length, which had been brought from a sál forest in the Western Duars, at a considerable distance from Kuch Bihár. The saplings have an average girth of 1 foot 3 inches. The tallest trees are in the centre and are about 30 feet in height; the inferior height of the outer trees of the plantation being quite perceptible, and plainly showing that sál prefers dense growth.

"This plantation has been very successful, there being scarcely a vacancy; and the saplings are full of vigour.

"It would be of great interest to foresters if certain trees of the sál, sissu, and khair plantations were marked, and their dimensions measured and recorded annually, with a view of assisting to determine the rate of growth of these species."

The writer does not say at what height the trees were measured; but if he were a forest officer, he would probably measure at 5 or 6 feet above ground. Assuming that the plants 18 inches in length were transplanted in the rains of 1874, the growth at 5 feet from the ground was not more than seven years old in 1881. The saplings averaged 1′ 3″ in girth or 2″4 radius with bark, or 2″ without bark: this is at the rate of 3½ years per inch of radius. The trees were very close, 7′×7′, or 889 to the acre. "Sál" the writer remarks, "prefers dense growth." It does when it is young, but this plantation would soon want thinning.

22. It will be said that in these three instances all this is garden growth, but it shows the growth from seedlings, which the dominant trees in Kheri are, and not coppice shoots properly so called, and I believe shows us what sál can do if fairly treated, and that at some future time we need not form our working plans on the assumption of its taking 13⅓ years to make an inch of radius.*

23. With reference to the 2nd clause of para. 4 of orders on last year's report, in which credit is given to me for being the first to point out that in "*sál*" more than one ring is developed in one year, I would point out that in the *Indian Forester* for April, 1882, page 359, it is stated that the Revd. Mr. Tenison-Woods obtained from a Mr. Hill, saw-mill owner, the certain fact that a specimen of blue gum (*Eucalyptus globulus*) made two rings per annum, a tree known to be 18 years old giving 36 rings. And further, it is stated that "from a long series of observations Mr. Hill concluded that there are two rings of growth for each year, and that the tallest trees of the forest, the giant timber of Tasmania, is 50 to 75 years old," instead of from 200 to 300 years as was generally supposed. It is added: "This conclusion is fully confirmed by the report of independent observers." This shows, I think, that in India we must not be bound down by rules of growth founded on growth of trees that are leafless for a considerable time, or pines and firs that have generally a cessation of growth in the cold climates of which they are generally natives. The blue gum and sál are to all intents evergreens.

24. With the ascertained facts that some trees make more than one ring a year, and that the increase in girth of sál is almost limited to 150 or 180 days in the year, I think we shall be able to ascertain by a series of observations of sál trees the cause of the several rings being formed and the period of formation, and in this hope I am

* Since the report has been sent to the Press some valuable information regarding the growth of sál trees has been published in the *Government Gazette*, of the 9th September, 1882, for which and remarks thereon see Appendix D. to this report.

designing a simple apparatus by which the increasing growth will act upon a lever the long end of which will indicate the growth on a magnified scale and allow the increase of growth to be noted daily and any peculiarity of growth noticed ; the figures will necessarily be complicated with the radial growth towards the fixed point to which the lever is attached, but this cause of error being known, it can be calculated and allowed for. The periodical growth will be compared with the readings of the thermometer, barometer, rainfall, and wet bulb for the same period, and the growth itself examined by taking a small sample of the sapwood on the circumference experimented on.

25. Whilst on the subject of working plans I will further quote the same writer "W. R. F." on the subject of khair, as reference will be made to the subject of khair and sissu in the next paragraph :—

"The khair (*Acacia catechu*) plantation consists of saplings from seed sown in 1873 and 1874, planted out at distances of 5½ feet. They are fairly straight, but many have been blown out of the perpendicular. The average girth is 1′ 6″, the largest measured being 2′ 1″, and the height is the same as that of the sissu. The site chosen is on land similar to that of the second sissu plantation. The general aspect of the khair and sissu trees is healthy and vigorous. I heard a local objection raised to khair plantations that the trees never attain large dimensions, but I have seen khair trees in the Eastern Duars fully 6 feet in girth and of considerable length of trunk."

"Small khair trees are also very useful for house posts for native huts and shops, and for which purpose sissu would not be available on account of its high value and larger dimensions. It is therefore certainly worth while to plant out khair, which is an indigenous species in Kuch Bihár."

This khair planted 5½′ × 5½′ gives 1,440 trees per acre. It is said "many are blown out of the perpendicular." Now, though planting closely for sál may and does do, planting closely with khair, sissu or kikar does not do. The trees get weedy and not only get blown out of the perpendicular, but actually fall over of their own weight, the want of air and light not permitting strong wood fibre to be deposited. We have many khair trees 6 feet in girth, but the trees have plenty of space round them; the growth of these closely planted trees was a little quicker than that of sál, which was 3½ years per inch of radius, but would have been much quicker if the trees had had more room. It will be seen I propose planting about 15′ × 15′ or 200 trees per acre, only half to be khair ; I propose planting for catechu and not for poles.

26. The system of sending in an annual plan of operations has been in force during the year. The annual plan was submitted by the Divisional Forest Officer through the District Officer to the Conservator, who forwarded it through the Commissioner to the Government. This annual plan of operations really existed before, as officers conferred with the Conservator before making up the budget, in which it was explained what works were wanted, and every estimate for works over Rs. 200 has to be submitted to the Conservator for sanction. The orders of Government will as far as practicable be followed out in submitting the plan of operations in the form ordered by the Government of India, but I would beg to point out that at the present there is not even a preliminary working plan for any division in the Oudh Circle, and that very much has to be learnt and done before a tithe even of the information required in the preliminary working plan can be obtained and given. The form of the preliminary working plan is given in para. 90 of the Code. The last part of para. 97 only gives a rough sketch of what the annual plan of operations is to be, and I think this is all that can be done at present, and that such was done when the late annual plans were submitted.

27. (d^1) *Plantations.*—The area under plantations at the commencement and close of the year is given below :—

Area on 1st April, 1881.	Area on 31st March, 1882.	+ or −
563 acres.	791 acres.	+228 acres.

and the amount expended up to date was Rs. 9,459 against Rs. 7,317 in 1880-81, the expenditure of the year being Rs. 2,142-14-6.

28. With reference to the remarks made in the 2nd clause of paragraph 2 of the orders on last annual reports, that "His Honor would like plantation operations pushed on more extensively," I beg to state that in Oudh we have two principal kinds of forests: 1st, sál forests, in which sál is associated with other trees of similar habits, and which grow on the high ground; and 2nd, sissu forests, in which sissu is associated with khair and generally with densegrass in the low lands; the remainder of the forests is composed of (3) "bojhis" or isolated patches of trees of the miscellaneous kinds (gular, pipal, bargat, sohni, tun and other soft woods), and (4) grass tracts without any tree growth on them. All but the sál forests are often under water during the rains.

29. In the sál forests, which form the greater part of the tree forests, no artificial sowing or planting is as a rule required, the trees reproducing themselves from naturally sown seed where there is protection from fires and grazing. Protection from fires and grazing, which allow the leaves to fall and decay on the ground and to form with the soil a seed bed for the young seedlings, with a certain amount of felling out of the old trees to admit light, is all the help required for natural reproduction, and when it is said that so many acres have been protected from fires and grazing, it is meant that natural reproduction has been allowed to proceed at a less cost naturally than it could have been done for artificially, and in tens of thousands of acres instead of in hundreds only.

30. But in sissu forests it is entirely different. The "natural method of reproduction" of the Continental Forest Schools cannot be followed out In sál forests seedlings will be found all round the parent trees; in sissu they will not. I have seen the ground under a mature sissu tree so covered with seed-pods that the grass below them could scarcely be seen, but a year afterwards not a single seedling was visible where the seed had been.

For the natural reproduction of sissu new ground must be formed; this can only be done naturally by the rivers or watercourses forming a deposit of silt on the surface of the land. But this is such a precarious method of reproduction and has the great disadvantage of taking place in isolated patches in seas of grass, interfering with grazing and the burning of the grass: so that to have large blocks of sissu that will not interfere with grass-burning, we must either resort to sowing *in situ* or transplanting from nurseries. It may at first sight appear strange that we have not been able to make sissu grow in the forests, when sissu grows so easily in cultivation; but it must be remembered that forest officers in the lands available for planting have to contend with long and dense grass (I annex in appendix C. an extract from *Humboldt's Travels*, showing the difficulty of seeds of trees establishing themselves in land long occupied by grass). "Munj" grass reaches a height of over 20 feet, and though it grows in clumps the grass is very thick at the base, covering the ground; "khagár" grass (from which the native pens are made) is about 8 feet high or more, and so dense at the top that from a "haudah" a pad elephant 50 yards off is often not visible, and buffaloes can be browsing a few feet from the elephant one is riding and they cannot be seen. The young sissu seedlings cannot bear any long continuance of shade and are very delicate at first, and it is only where silt deposits bend the grass over and kill it that the seed can germinate; and then it is only owing to a number of fortuitous circumstances that the seedlings get of sufficient size to hold their own against floods and the grass which springs up again. There are other grasses of smaller size in which sissu can be *planted*, but in these sissu trees are seldom if ever found, and these grasses are extremely close at the bottom. The lands really suited for sissu are very often under water for some weeks during the rains, and if the seedling is entirely covered with water for a few days it dies.

* In cultivation young sissu are often seen under mature trees on banks and in grass where the "mális" have stirred up the soil near the roots, or at some distance from the roots where people have been grubbing up "dúb" grass and wounded some surface roots; but in nearly every instance these young trees are suckers (or root shoots) and not seedlings.

31. I will now give briefly the experiments that have been made: I commenced experimenting with sissu in 1868-69, when I sowed sissu and khair at Newalkhar. For cheapness sake the land was dug up in narrow lines and the seed sown on the new earth, generally some 6 inches high. The seed was sown in the dry weather, to germinate in the rains. The seed germinated, but it was soon choked. In the experiments till 1878-79 artificial irrigation was not regularly resorted to. When I was on furlough, 1870-73, Captain Stenhouse tried sissu sowings in four places: (1) Again near Newalkhar, where the soil is sandy and dry and covered with "munj" grass; the seeds germinated, but did not live, though helped artificially for a time with water. (2) At a place on the low ground near Dudua; here the seeds germinated, but the seedlings were either choked or swamped. (3) At Kataniaghat; the seedlings came up, but were very puny and would have died off had not a fire that got into the nursery in 1874 cleared them all off. (4) Sowing khair and sissu was tried also at Ramgarh, Gonda, but the land was too low: the seedlings got swamped and only a few on the high ground escaped.

In making the next experiment I tried on high ground at Sarotá phanta, adjoining the sál forests, but slightly lower than them, and where in the rains the water remained a few inches on the ground, I made the strips broader and tried to get a softer soil for the rootlets; the seed germinated, but the shade was still too great, and the earth being only a foot deep was too much composed of roots, and besides this it caked. An experiment was also tried in ploughing up the land and sowing broadcast; the seedlings germinated and promised well at first, but a few stunted trees only remain.

32. Seeing the difficulties of sowing *in situ*, in 1877-78 I tried sowing with a view to transplanting. I had sissu sown in pots* formed of two semi-cylindrical tiles, the pots being about 6 inches in diameter and one foot deep. In one place the small nursery was swamped; in the other the earth, which had not been consolidated enough, had sunk in the pots. The seed germinated, but owing to the shade of the sides of the pots and the damp the seedlings were puny and sickly and were eaten off by grasshoppers. In all the preceding experiments the seedlings in the cold weather following their being sown had stems hardly thicker than a hair-pin with a few small puny yellow leaves. In 1879 care was taken to have the earth in the pots consolidated; the seed was sown, and in most cases the seedlings came up and the vigorous ones got into the ground so firmly that there was no removing them. In April, 1878, in Gorakhpur (lately incorporated in the Oudh Circle) there were plantations, and Mr. Allan, who had come from the Panjab and seen the plantations there, sowed some seed on ridges in perfectly prepared soil, watering artificially till the rains set in. The plants were taken up when a foot or two high and transplanted into the land that had been cleared of sál, but, as shown further on, these plantations have not been the success anticipated on account of the growth of grass. In 1879 I had the seedlings grown on the ridges transplanted into narrow cylindrical pots like flower-pots, but the "máli" had not taken the precaution of filling the bottom of the pots with broken tiles, and the vertical roots had in October gone through the holes in the bottom, and necessitated the breaking of the roots off in transplanting. Cuttings of sissu were also tried and watered; they struck well and were planted out and watered, but were not a success. In April, 1880, I tried in Gorakhpur—Mr. Campbell being in charge—pots 3 feet deep made with 6 semi-cylindrical tiles. The seedlings from the ridges in the nurseries being transplanted into them in October of the same year, the roots had got down to their limit, bricks having been placed at the bottom of the bed, and these were more successfully planted; the transplanting into the pots, however, had checked the growth. In April, 1880, Mr. Allan, who had gone to Bahraich, sowed sissu in pots of the following make at Ponsonbyganj: to do away with the hole in the bottom, flower-pots were

* In this and the following experiments the pots are always sunk in the ground; to protect the plants against the drought, for a week without rain in the rainy season, would have killed off the plants, as they had to be left to themselves, no persons living in the places from June to October.

made entire and without the hole in the bottom, cut vertically in two before being burnt, when burnt they were tied together firmly with string, the earth filled in and seed sown. If the pots had been left entire there would have been no drainage, and the plants would probably have rotted off. It was expected that a slight crack between the half pots would allow of drainage, but confine the roots, and the half pots would be economical in allowing the plants to be taken out and the pots used again; but in October, 1880, the plants were about 5 feet high, and on their being transplanted in November, 1881, it was found in every case that the roots had found their way through the cracks at the sides and bottom and gone deep into the earth. These were dug up and transplanted with about 4 feet roots; the pots being in halves allowed the roots to be extracted. Much of the roots had however to be left in the ground; these are the plants mentioned hereafter in para. 97.

In April, 1880, Mr. Allan also made a nursery at Nishangarh, sowing on ridges in the nursery without pots, and again tried planting out in the rains of the same year. He had holes dug ready for the first fall of rain, and the seedlings from 1 to 3 feet high were planted out when the rain had fallen; some have lived, but most have died, the grass having been too much for them. Some seedlings were left in the nursery, of which more hereafter. In April, 1880, at Dudua, seeing the difficulty of getting the roots out of the ground, I had beds dug 2 feet deep, masonry floors made and then filled in with pots and earth; seed was also sown in a larger bed about 1′ 6″ deep with masonry floor without pots; but, as will be found in para. 85 hereafter, the roots of the non-suppressed trees found their way through the masonry floor or had run along it till they got to the side, when they sent their roots deep down into the soil.

The April-sown seedlings of Nishangarah, 1880, were used in February, 1881, in filling up blanks, but their roots had to be broken. In February, 1882, I had a trench dug alongside a row of the remaining seedlings (some of them 12 feet high), and found that even the suppressed seedlings had fully 6-feet roots. In April, 1881, in Gorakhpur, seed was sown both with and without pots and artificially watered till the rains, and we can now grow seedlings fully 6 feet high and with 6-feet roots in six or eight months, showing the very great difference of seedlings sown in perfectly prepared soil with artificial irrigation, and seedlings sown on soil full of roots improperly prepared and without artificial irrigation and without being kept clear of grass.

33. In the past and former year I examined many hundred roots of artificial-sown seedlings in the nursery, and plants after they had been planted out, and of natural-sown seedlings, and found the roots made by sissu in the sandy soil of the Oudh forests very different from the roots of sissu as generally represented in Ribbentrop's "*Hints on Arboriculture in the Panjab*," pages 92 and 124; the only exception being the one specimen, figure 32, obtained from a soil somewhat similar to that of the Oudh forests, *where there was sub-soil moisture.* Long thin roots at first go straight down, forking gradually, side roots being thrown out afterwards in the upper 2 feet of surface soil, which is generally rich in plant food. Mr. Ribbentrop represents the Panjab sissu roots like inverted dead fir trees, side roots branching out from a centre tap root, the side roots at the surface being longer than the side roots lower down and so on decreasingly. Excepting roots 31 and 32, the 10 roots for which measurements are given give a tree height of 62′ 8″ to a root depth of 25′ 5,″ or for a tree of 6¼ feet high a root a little over 2½ feet deep. In Oudh a 6¼ feet tree would have fully 6 feet of root depth. The shallowness of the Panjab roots is accounted for by the stiffer soil and the moisture being from the surface, canal irrigation having to be employed, and it is feared that if the canal supply failed, there would be numerous deaths in the Changa-Manga plantation. In the places generally selected for the Panjab plantations surface waterings are a necessity, and only by the aid of artificial irrigation have the plantations succeeded. In the natural forests of Oudh, the first thing a seedling (whether of the sál or sissu class) does is to get its vertical root down to moisture. It has no artificial moisture to keep it from the dry cold of the winter and the scorching sun and drying hot winds from the end of the winter rains (say the middle of January)

to the middle of June, and often longer; if the vertical roots get down to permanent moisture, the seedling lives; if not it dies. In digging out a number of transplants, I have generally found that when the tree was stunted above ground, the root had been damaged in the transplanting, either broken or forced up against the bottom of the hole; that when the plant was regaining strength, that a spur had been formed, going down vertically; and that when the young stem was straight and healthy, the root was straight and unbroken below. I also found that even when the root was healthy, but greatly contorted by having to twist about among strong grass and other roots, the plant was not so strong or clean stemmed as where the roots had not such opposition. It is only natural to suppose that the less resistance there is to the free flow of sap from the absorbing parts of the roots to the leaves, the freer the flow will be and the more rapid and healthy the growth; and every contortion of root or branch prevents the free flow of sap.

34. To estimate the subsoil moisture Mr. Battie made some experiments in different places on the 21st April, 1882, when the weather was at about its driest and before any shower had fallen. Five holes were dug 6 feet deep (this is the depth I estimate a sál or sissu seedling of June or July would be safe if it made that growth by the 1st of March following). A sample of earth was taken as it came out of the holes and the weight of Rs. 100 put aside; these samples were afterwards carefully air-dried in a room, and the difference taken as moisture; eight anna, four anna, and two anna pieces giving the fractions ·5, ·25, and ·125 of a rupee.

Table showing percentage of moisture.

	1st hole.	2nd hole.	3rd hole.	4th hole.	5th hole.	Remarks.				
						1	2	3	4	5
1 foot ...	2·375	2·875	3·625	...	10·875	Sandy loam.	Sandy loam.	c+s	Sandy c	Clay
2 " ...	6·25	6·	13·875	·375	4·625			c	s	c and s
3 " ...	6·625	7·	1·25	·875	16·75			blue s	...	fine c
4 " ...	9·	8·875	13·625	1·375	11·875			mostly c	...	c and s
5 " ...	10·5	8·875	17·125	2·5	5·25			s	...	s
6 " ...	9·625	8·125	24·875	17·5	10·875			s	...	s
For 600 ...	44·375	41·750	74·375	22·625	60·250	...	...	...	...	...

Nos. 1 and 2 holes were in high ground, sál forests. No. 3 in grass land covered with "khagar" grass, where the river overflows, and which is the most favourable soil for sissu; No. 4, where "munj" grass grows, and where there are forests of sissu and khair which were more flooded formerly than now; No. 5 is in rich "bojhi" soil, the trees consisting chiefly of rohni. The soil of the sál forests is much like that of cultivation, but as a rule more sandy: the other holes were in soil answering more to the soil of the sailaba lands of the Panjab, formerly the bed of the Sarda (the bed is some ten miles broad) and now within the influence of the Soheli river, which flows in the northern part of the old bed of the Sarda. The 3rd foot of hole No. 3 is the coarse blue sand deposited in some heavy flood of the Soheli. The letter "*c*" means clayey, very fine silt; "*s*" means a sandy soil, midway between the fine silt and the blue sand. Water is found 40 to 50 feet below the surface in the sál forest; from 6 to 12 feet in the sissu. Sissu seedlings sown *in situ* in soil similar to 1 and 2, artificially watered from the time of sowing in April to the rains, strike their roots down sufficiently to require no further watering. In digging up natural-sown seedlings in the low ground I found their roots well amongst the damp cool soil of the

moisture of grocers' moist sugar, and other rootlets were in still moister soil, in soil that exuded water after a little handling.

35. In the natural forests of Oudh the vertical root play sa most important part: it is to all intents and purposes its water root. The plant may get more concentrated food from its wide-spreading side roots, but water it must have to live, and without the water I do not believe it could assimilate its food from the dry upper soil. In the moist temperate climate of Europe the tap root is cut off to save trouble in transplanting;* the tree lives; the upper coat of the earth is generally moist, the air also; there is none of that scorching dry heat that there is in Oudh from March to July, when perhaps not a single shower has fallen to moisten the earth, and the superficial watering of the winter rains has been dried up. But Oudh and the sub-montane regions adjoining have a subsoil moisture to depend upon. When the hot winds are blowing their hottest and the sun is burning, and when in cultivation, only deep-rooted trees and arhar (soon to die and ripen unless watered) and sugar and poppies artifically irrigated are among the few things that show vegetable life, the annual cereals having been taken off the ground, now a baked surface: in the forests both the deep-rooted trees and the perennial grasses (that have been burnt over flush with the ground but a few weeks before) are a mass of verdure; the green is almost dazzling; all have succulent green leaves; there is but little moisture in the air, and that mostly from the evaporation from leaves; the roots of both trees and grass are deep down in permanent moisture constantly rising from below by capillary attraction as evaporation and absorption take place. With deep vertical roots, the Indian forests stand against winds that would upset and destroy many of the surface-rooted forests of Europe; with subsoil moisture I do not consider that Indian forests require that dense cover that European forests do to keep in surface moisture.

36. Experience has shown me that there are many trees that do not want to be shaded, either on their leaves or about their roots, and that sissu is one. Given the vertical roots of sissu in permanent moisture which it reaches naturally in the first year of its growth, the hotter the sun, the hotter and stronger the wind, the more the trees prosper. Nature points out to me that trees that have to clothe newly-formed islands and sand-banks (as sissu and its associates, khair, &c., have to do) must do without shade in their infancy. This is against all French and German theory of forests generally, but the facts that have to be dealt with are different. In remarking on the Patli forests of the North-Western Provinces† Drs. Brandis and Schlich and Major Bailey lay great stress on the ground being densely shaded and cannot account for the slow growth of the sissu, but hazard an opinion that fires had entered the plantations several times, or that there were boulders in the sub-soil. The gardener declares on the other hand that fire only once entered, and this is borne out by the healthy appearance of the trees, and as for boulders in the sub-soil, the natural forests of the Sherpur zamindars in Pilibhit are on boulders, and sissu germinates and thrives in a soil consisting of nearly boulders alone. Nothing is said of the closeness of the trees being the reason. In the Patri forests I will take the figures given in para. 262 referred to. The 5-years old trees are 3 feet apart in lines 5 or 6 feet apart; taking the mean as 5½ there are 17½ superficial feet per tree. In the 10-year-old plot the trees were 4 feet apart in the lines, giving 22 superficial feet in the unthinned and 44 superficial feet in the thinned portion. In the 5-year-old plot the average girth of the dominant trees was 7 inches; of the dominant trees in the 10-year-old plot 12 inches: this gives about five years per inch of radius. In Mr. Grant's plantation of Madhaulia, Gorakhpur (para. 111 hereafter) now some seven years old, the trees are about 8½ feet apart, each way, giving 72¼ superficial feet per tree; two-thirds of the trees are 6 inches in diameter, showing 2¼ years per inch of radius. In Shaikh Mohi-ud-din's plantation

* An English authority now states that oak trees that have their tap roots cut never form the same healthy good timber that trees planted whole do. I believe the cutting of the tap root is bad for all *timber* trees, though very desirable for *fruit* trees in which vigorous timber growth is not required and which has to be kept down by pruning.

† Suggestions regarding Forest Administration in the North-Western Provinces and Oudh, by Dr. Brandis, Ph.D., C.I.E., Inspector-General of Forests, 1st November, 1881, page 102, para. 262.

(para 110 hereafter) the trees were originally planted out 6′ × 6′ or less, and seeing they were damaged by being too close, I had them thinned out, first 6′ × 12′, and afterwards 12′ × 12′, giving 144 superficial feet. The average girth of the dominant trees is 1′-6″ in 12 years, or about 4 years per inch of radius. In the present year there has been an average increase of girth of 1″·7 for 110 trees measured; taking dominant and suppressed together, this gives rather less than 4 years to the inch, but the dominant trees have made an inch in 3 years. In some of the trees at the edges *which have had air and light* the increase has been at the rate of an inch in two years. The writer before quoted, signing himself "W. R. F." in the *Indian Forester* for July, 1881, gives measurements of sissu of known age in some plantations in Kuch Bihár; here trees 9 years of age planted 16 feet apart, 256 feet superficial area, have an average girth of 2′-3″, the largest 3′-2″: this gives a little over two years for the former and less than 1½ years per inch of radius for the latter. Where the trees were planted 27 feet apart, or 729 feet superficial area, a tree of the same age had attained 3′-10″ in girth and thus took a year and a quarter to form an inch of radius. These trees were about 50 feet high. The 5-years-old trees in the Patri forests were 18 to 20 feet high; the 10-year-old trees about 30 feet.

In February, 1880, with Mr. A. Campbell of the Gorakhpur Division, I took some measurements of sissu trees planted by Mr. Peppé of the Basti district on his estate at Birdpur; 66 trees planted in a triangular plantation, 18 years old, 18 feet apart each way, superficial area 256 feet, averaged 3·15 feet in girth at 5 feet from the ground, or 6 inches radius, giving 3 years per inch of radius. The dominant trees are over 3′ 15 and their growth was from 2½ to 2¼ years per inch of radius. Nineteen trees planted in an avenue 32 feet wide with spaces of about 32 feet between the trees, superficial area 1,024 feet, 18 years old, had an average girth of 4′·1″ or 7″·8 radius, or 2⅓ years per inch of radius. A solitary tree 27 years old was 8′-10″ girth at 5 feet from the ground, or 16″·88 radius, or had made an inch of radius in a little over a year and a half. These figures have been taken without considering the thickness of the bark, but the differences are so great that in rough figures like the above it need not be much considered. The trees planted so closely as in Patri could not go on making even their present increase unless severely thinned.

To sum up, trees with 7½ to 44 superficial feet area made one inch radius in	5 years*	
36 superficial feet (now increased)	4	,,
Now increased to 144 superficial feet...	3	,,
72½ ditto	2½	,,
256 ditto	2⅜	,,
324 ditto	2½	,,
729 ditto	1¼	,,
1,024 ditto	2⅓	,,
Unlimited ditto	$1\frac{6}{10}$	,,

The trees that only made one-fifth inch radius a year had the benefit of canal irrigation for years which the others had not. I think these figures—all I have at present at my disposal—† tend to show that when there is sub-soil moisture, shade is not required. In surface-watered land it may be expedient to shade the land to prevent rapid evaporation; but my experience is that few and stronger trees give more shade in a few years than a number of tall weedy ones. I have noticed in neglected plantations, or rather nurseries, when there were long specimens left, the growth was

* Since this report was sent to be printed I have heard from Mr. Angus Campbell, Superintendent, Roorkee Workshops, who formed the plantation under reference, that the plots mentioned as 10 years and 5 years old respectively were really only 7 years and 4 years old when visited by the Inspector-General. This increases the rate of growth from 5 years to 3½ years per inch of radius. The corrections however hardly affect my argument. Mr. Campbell having driven a number of Norton's tube wells on the spot found the boulders to begin 4 to 5 feet from the surface. He planted for charcoal and only wanted thin trees, but had the forests remained in his charge he had intended considerable thinnings.

† In Brandis's *Forest Flora*, page 150, the author puts the growth in the Panjab "under fair conditions an average of 2½ feet girth in 12 and 4½ feet in 30 years." This is about 2½ years per inch of radius, but the fair conditions are not stated. In Gamble's *Manual of Indian Timbers* some tree measurements are given, but not the superficial area allowed to the trees referred to.

poor. Sissu and similar trees require a large leaf surface, and consequently much sun and air, to form wood in the stems. I have noticed in many miles of roadside sissu trees, from Gorakhpur to Ranibagh, that many sissu trees have grown beautifully-shaped stems without surrounding cover to draw them up. I attribute this to the trees having their vertical roots straight and deep below them in a rich damp soil.

37. In sál forests, as in the fir and other forests of the Continent of Europe, we want the trees to have long clear stems free from knots for building purposes, long beams, rafters and planks, the small poles being used for more temporary buildings; and the longer and straighter the stem, the more valuable the timber, and nature plants these trees thickly and provides them with suitable leaves that can bear shade.

38. But sissu is the wheelwright's and carpenter's wood. In very few cases is straight stuff longer than 4 feet required, and then only for tables and door-frames. *The* great use of sissu in these provinces is for making the felloes of wheels; these felloes are in four pieces, each being a quarter of a circle. Straight wood will not do and here the natural curves of the sissu are utilized. It is the thick curved branches that are so useful, for here the lines of the grain correspond, or nearly correspond, with the circular lines drawn from the centre of the nave. Curved pieces are also used for the "painjanis" or axle-supports outside carts; furniture where curves are required, as in the backs and back legs of chairs; there are always plenty of short straight pieces fit for agricultural implements, naves and spokes of wheels, "charpaya" legs, small chairs, tables, boxes, platters, sandals, and articles of turnery. Sissu is to the wheelwright of these provinces what the oak grown in open spaces was to the ship-builder of Europe, when wooden ships were in fashion, for the elbow and knee pieces; where the curve of the ship was made with the natural curve of the oak, no amount of bending by steam or sawing would do where great strength was required; such oak trees were often topped and trained to make large curved branches instead of straight stems.

39. Where sissu is grown near large towns, it might pay to plant thickly and sell the thinnings; but I think this even questionable if the final crop is to be heavy timber. But in Oudh our forests are far distant from towns and thinnings of densely-planted saplings would be only profitless expense.

40. As I have said before, I believe in straight deep-rooted seedlings making fine vigorous growth. If the tree makes a clear bole of 10 feet it will be sufficient. To get this straight growth of root and to be able to transplant it, I have had some sissu sown in 6 pots, 5 inches diameter, built up of 4 semi-cylindrical tiles of 3 feet each, with an earthenware saucer at the bottom. There is a danger in these built-up cylinders of the root breaking in two, even if it has not succeeded in escaping at the badly-joined sides. I am now endeavouring to make cheap cylindrical pots 4 or 5 inches in diameter that will be strong enough to keep the roots together till the time of transplanting. I lay great stress on getting entire roots put in the new site with little disturbance and the ends of the vertical roots in communication with the moist sub-soil. I believe with the 5-inch cylinder and a cheap way of making holes not much larger in area than the pots, but 6 feet in depth, we can plant successfully large trees in the densest grass, and where floods rise 3 or 4 feet, and with a certainly of success. I am experimenting with the long cylinders and deep holes, and hope soon to report that the experiments are successful. We cannot generally transplant in the forests in the rains, as is done in the cultivation, but must plant between November and February or March, before the trees have thrown out their new leaves. With whole pots and saucers I hope to confine the roots in the weaker-grown plants for the second year, the strongest being put out 7 to 10 months old.

41. For the reasons given above I do not propose dense planting, but about 200 trees per acre; this will give 217·8 feet superficial area to each tree. I propose planting 100 khair, to be removed in about 20 years, and used up on the spot for catechu; 50 jaman, tun, fig, and other miscellaneous trees, and 50 sissu trees that are to form the final stock, it being well known that a variety of trees is essential to the well-being of most forests, as different trees do not take exactly the same elements from the soil.

42. In some places it may be advisable to sow, and having seen the causes of the former failures, I am sowing on large mounds of fresh earth (for details see para. 77 hereafter), which may represent silt deposits, allowing the grass to be killed underneath the banks and the seedling on soft damp earth can strike root rapidly in it, the mounds being of a height sufficient to save the seedlings from one foot floods or stagnant water. I trust that from what I have written it will be seen that in sál forests there is no immediate necessity for planting, and that where it is the intention to form sissu plantations we are at last on the road to success. When the proper method has been ascertained, works can be pushed on as vigorously as money and labor will allow, and we shall not have to write off large areas as failures, as has had to be done elsewhere.

43. (e^1) *Protection from fire.*—The following list shows the area protected and preserved—

Divisions.	Area attempted.	Area protected.	Cost.
	Acres.	Acres.	Rs.
Pilibhít	20,588	8,217	1,706
Bhira (sub-division)	15,712	6,285	1,596
Kher (trans-Sarda)	42,080	32,320	3,252
Bahraich	30,270	29,218	1,415
Gorakhpur	73,540	73,490	1,197
Total ...	182,190	149,530	9,166

against 178,619 attempted and 173,754 preserved of 1880-81. This has been a very unfavourable year for fire conservancy owing to no late rain having fallen in September-October, and there having been very light winter rains. The principal failures have been in Pilibhít, where a fire leapt from the Tarái forests across a broad road; most of the area however is grass and stunted sál. In Bhira also a very large fire occurred late in the season; unfortunately it started from windward, and it could not be extinguished before it had done much damage. In Kheri there were several considerable fires, mostly caused by carelessness of carters and travellers. In Bahraich it is thought that the fires have been intentional. Gorakhpur has been very successful, but it may, I think, be said that the difficulty of fire conservancy decreases from west to east. In Pilibhít and Bhira only are the inferior sál and grass lands protected; in the other divisions such stuff would be burnt to save the superior tree growth, but the Pilibhít and Bhira forests are so intimately mixed up, dwarf sal, grass and poles, that we have not had time yet to demarcate them from each other.

44. The area of 1880-81 has but little increased, and then only where the extensions hardly gave any extra work.

Taking the whole, 82 per cent. of the area attempted has been saved, the failures being 18 per cent.; but in the more valuable forest the failures have been much smaller.

45. A good deal of the forests that do not come under regular fire conservancy escaped; but in Gonda, owing to Mr. Rebsch's absence on deputation, a good many fires were lighted intentionally and damage done to seedling growth, which damage, I hope, however, is not irremediable.

46. (f^1) *Other works.*—Creeper-cutting was carried out on a small scale in Kheri, but there are so many more important things in hand that we cannot spend more time and money at present. The growth has been kept down where the old trees are; it is where the young growth is coming on that we shall have to pay most attention to hereafter. In Gorakhpur the parasite "banda" was cut out in parts of Ramgarh.

The 80 acres where improvement fellings were conducted near Dudua are doing well; and in Ramgarh and Tilkonia in Gorakhpur the usual improvement thinnings were carried out with profit.

The natural reproduction of sissu (1873) in the lower closed block at Dudua is thriving, and naturally reproduced sissu is coming on in parts of the same block where silt deposits have allowed the seed to germinate, and a small patch adjoining the closed block was found to be full of seedlings and was protected.

The natural reproduction of bambus at Salapur has been good, owing to the closing against cattle, and compares most favourably with reproduction in cultivation where cattle have free access.

47. As pointed out in part (d^1) "Plantations," of this section, as a rule free protection and protection from grazing is sufficient to make certain of reproduction of sál and its associates; but there are places where it may be desirable to hasten or supplement young growth by transplants of sál, and attention has been given to its artificial reproduction. Mr. Campbell sowed some sál in June, 1881, on the surface of nursery ground fully exposed to the sun, and the seed germinated and sent down roots deep enough to maintain the seedlings through the cold weather, and through the hot dry season; he is making some similar experiments this year. Some sál seed is also being sown in 6 feet cylindrical pots in Bahraich and Gorakhpur to try the planting out with deep roots, to get the ends if possible in contact with subsoil moisture. Mr. Rebsch has also tried the transplanting sál yearlings out in the experimental plots in Ikonah, giving them artificial irrigation till the rains; these seedlings only had about 9-inch roots, having germinated on a hard soil. I noticed large quantities of sál seedlings dying off in March, directly the hot weather came on; the roots in all cases of dead plants examined were extremely short. I have noticed that seedlings under large trees do not prosper, as the natives say "they get no dew." I have noticed large quantities of seedlings thriving in blanks where there is only grass. Sál seedlings differ in this respect from sissu seedlings; they can bear much more shade, but they cannot bear intense shade. Grass protects them from frost. Sissu naturally loses its leaves in the cold weather, whereas sál is hardly ever leafless: it does not lose its old leaves till the new ones push them off.

48. Experiments were also made, in badly-treated coppice forests, in coppicing in some eight plots; two in Pilibhít, one in Bhira, and five in Ikonah. In pole forests the principle was to cut flush with the ground, so as to give straight sound growth from the ground level, and in strips to give protection by leaving a strip of forest untouched three times the breadth of the strip cut over, to afford protection from frost and sun and to supply moisture from evaporation. The forest operated on is theoretically divided into four or five blocks, which would be visited in succession. Thus the first block operated on in 1882 would be next visited in 1886 or 1887, when the middle of the three-fold strip would be cut over, one remaining strip being cut over in 1890 or 1892, the other in 1894 or 1897. Thus the whole forest would be gone over in 1898 or 1902, giving a rotation of 16 or 20 years. By making 6 or 7 blocks, the rotation could be lengthened to 24 or 28 years. I have adopted 16½ feet as the width of the first strip and 49½ feet of the three-fold strip as the total is 66 feet, a number of feet convenient for working acres in, and as far as experience goes the width is a good working width in low scrubby forests.

There are large quantities of stunted sál both in large plains and under tree growth. Experiments have been made to see if by a system of underground or rather ground-surface pruning we can get up a superior growth; the growth is useless for grazing

and at present does not afford timber. Sál does not seem to flower or seed (unless in exceptional cases) until a tree is of some age, and with the branches that bear flower buds it is the same. Thus the stunted sál which is cut over yearly by frost and fires never flowers or seeds, though the stem which lies along the ground is very old. The young growth is to all intents a yearly pollard growth. In some instances a strong shoot gets a head and raises itself above its fellows. I have taken notice of these trees that have got out of the very dwarf stage, and for some years I have noticed that alongside various roads they seem to be more numerous. Again I noticed that where the Bhira-Mailani road passed through "Chandars," (the local name of these expanses of stunted sál) that there were numbers of trees 8 or 10 feet high instead of the usual 3 or 4 feet; that there was a belt of these along both sides of the roads. It then occurred to me that in first making the road it had been marked out some 50 feet broad (the width it is in cultivation), whereas 15 feet was only kept up for the road. The gnarled stems had been cleared off with the "pharuah" and the new shoots were established near the tap roots and in direct communication with them, instead of being at a comparatively long distance from them, and having to have the flow of sap retarded and vitiated in its circulation from the tap roots along gnarled and very often decayed stems. I examined and found that these dwarf plants had fair tap roots, and that cutting off the horizontal stem above the tap root was doing to all intents the same as cutting off a vertical stem level with the ground. The probabilities are that the stems that have risen above their fellows in the open "Chandars" have risen from plants that have been accidentally pruned by men or pigs digging up the stemless dates or roots for food, and the ones on road-sides where the old stems have been cut off in getting earth for the repair of the road. An acre of dwarfed sal was cut over level with the ground and the land hoed up, but it was done rather too late in the season to get the best results. The experiment will be continued under more favourable circumstances. Some dwarfed sál was also experimented on in a similar manner under tree growth in Ikonah.

49. Along with stunted sál in the open I found two trees dwarfed, phalsa and kumbhi. The former grows into a small tree in the forests; in the "Chandars" alongside the stemless date it is dwarfed: it bears its flowers and fruit on wood of the same year's growth. From underground stems shoots about one foot high spring up, the land in which they grow being generally burnt over. In March there is no appearance of the plants above ground; in May there are shoots with ripe fruit on them. The natives know of this property of the phalsa, and in cultivating the fruit for sharbat always cut the plant over freely. I was however surprised to find kumbhi doing the same. On the Mundiaghat road Mr. Ponsonby had described to me a tassel-like flower growing on the ground. The regular time for flowering was over in the end of April, but I came upon some pear-like fruit growing on stems some 9 inches to one foot above the ground with leaves like those of kumbhi. Soon after, in a place that had been burnt about a month before, the kumbhi flower was found. I at once sent to the forest for specimens of kumbhi fruit, and the fruit of the dwarfed and forest growth were nearly the same, the forest growth being a little softer and more succulent. I have also seen inside the forest a solitary shoot of the bhilawa (*Semecarpus anarcadium*) with a head of its acorn-shaped fruit; the shoot was only about 3 feet above the ground.

50. Attention has been paid to the insect life in the forests. White-ants have been the subject of my observation for several years, and the conclusions that I have arrived at are broadly these—that, like Darwin's worms, white-ants and most other insects live only on decomposing matter, and that it is probable that at certain periods of the lives of some, and in the whole life of others, that they can only assimilate food when it is in a state of decomposition or fermentation, when a chemical change is effected. I have circulated Darwin's book about worms among the officers of my circle.

51. The total amount spent for demarcation, improvement and extension of forests was Rs. 18,400-15-4; the total of all "protection and improvement," without share of establishment, being Rs. 54,460-2-2, or Rs. 72,101-10-7 with share of expenses and establishment.

SECTION III.—YIELD AND WORKING.

52. The prescribed tables are given below:—

ABSTRACT OF FORM 58.

The trees cut in selection fellings are as under :—

Description.	Trees felled.	
	No.	Cubic contents (estimated).
Sál trees	2,528	126,400
Sissu	531	13,304
Aseyna	101	6,500
Total ...	3,160	146,204

Last year only 2,006 sál trees were felled, but the Inspector-General of Forests has approved of the number being increased from 2,000 to 2,500. The 2,528 sál trees yielded 3,780 logs and pieces, and 101 aseyna 130 logs and pieces, while the 531 sissu trees yielded 531 logs.

53. Owing to change of forms in the Forest Department Code, 2nd edition, the returns could not be compared with last year's returns exactly, but as far as practicable they have been compared in the following table, which shows the general yield of the forests, abstracted from forms Nos. 58 to 63, as well as departmental thinnings, line-cuttings and free gifts to privileged villagers. "The other departmental fellings" included dead sál trees standing, line-fellings, and a few trees cut for sleeper operations. The thinning operations were conducted in Gorakhpur and a detail of the fellings will be found in appendix to form No. 58. The number of trees cut and removed by purchasers have had to be estimated, as also the free gifts to the villagers. The latter figures are rather under the mark than over, it being calculated that the poles and saplings are sufficient to build 10,500 new separate houses of about 12′ × 16,′ or 1,500 in each sub-division ; but, except in case of fires, renewals are not generally much oftener than once in three or four years.

54. The amounts are as below: —

	Cubic feet.
Green sál	353,031
Dead sál	329,630
Total sál ...	682,691
Sissu	13,930
Aseyna	188,136
Miscellaneous	347,334
Total	1,232,091

To which if we add 267,909 cubic feet for fuel we have 1,500,000 cubic feet for the Circle.

The area of the forests is 1,090 square miles or 697,298 acres; of this about 500,000 acres are covered with tree forest, so that though the yield may at first appear large, it is really only 3 cubic feet per acre ; and allowing for error, if it had been 5 cubic feet per acre, it would only be about a tithe of what the forests will eventually yield. Of course with the 1,500,000 cubic feet yielded there is a great deal of waste in the forests which is not at present utilized. Thus in the yield the tops of the trees have not been taken into consideration, though some of them have been used up for fuel. These figures do not include the khair trees cut for catechu, for which details cannot at present be given.

Statement showing the number of species of trees felled during 1881-82.

Description.	Green sál.					Dead sál.					Sissu.	Aseyna.					Miscellaneous and dead.					Total.	
	Over 6′ in girth = 50 c. feet.	Over 4½′ in girth = 30 c. ft.	Over 3′ in girth = 20 c. ft.	Over 1½′ in girth = 7 c. ft.	Under 1½′ in girth = 1 c. ft.	Over 6′ in girth = 40 c. ft.	Over 4½′ in girth = 25 c. ft.	Over 3′ in girth = 16 c. ft	Over 1½′ in girth = 5 c. ft.	Under 1½′ in girth = 1 c. ft.	Over 6′ in girth = 30 c. ft.	Over 6′ in girth = 45 c. ft.	Over 4½′ in girth = 30 c. ft.	Over 3′ in girth = 20 c. ft.	Over 1½′ in girth = 2 c. ft	Under 1½′ in girth = 1 c. ft.	Over 6½′ in girth = 30 c. ft.	Over 4½′ in girth = 20 c. ft.	Over 3′ in girth = 15 c. ft.	About 1½′ in girth = 1 c. ft.	Under 1½′ in girth = ½ c. ft.	Total of each description.	Total cubic feet of each description.
Section fellings	2,528	...	...	...	...	...	...	...	...	...	531	101	...	...	...	...	...	...	...	...	...	3,160	146,875
Other departmental works and fellings.	874	715	...	...	...	375	358	...	...	...	...	4	...	...	...	...	...	1,447	...	168	...	3,941	118,388
Thinnings cut by Government agency and removed by consumers.	...	...	...	7,989	45,558	...	...	...	...	...	...	...	...	...	...	9,911	...	...	...	...	5,000	68,458	113,058
Cut and removed by purchasers...	200	...	2,500	...	...	942	1,000	3,000	10,000	40,000	...	100	100	...	...	66,000	200	1,278	1,000	25,000	5,000	156,320	407 406
Free gifts three-mile villages ...	...	...	...	...	...	...	...	...	17,500	17,500	...	...	...	...	...	100,000	...	...	...	30,000	640,000	80,500	448,334
Total No. c. ft. ...	3,602	715	2,500	7,989	45,558	1,317	1,358	3,000	27,500	57,500	531	205	100	...	...	1,75,911	200	2,725	1,000	55,168	6,50,000	10,36 879	1,234,061
	1,80,100	21,450	50,000	55,923	45,558	52,680	33,950	48,000	137,500	57,500	15,930	9,225	3,000	...	...	175,911	6,000	54,500	15,000	55,168	216,666	12,34,061	1,234,061

56. The following gives the general statement of timber felled :—

Year.	On hand.		Felled.		Total.		Disposed of.		Closing balance.	
	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.
1880-81 ...	300	6,000	87,388	92,760	87,688	98,760	87,,679	98,661	9	99
1881-82 ...	9	99	1,036,879	1,234,061	1,036,888	1,234,160	103,688	1,234,160	...	...

57. The following is an abstract of Form No. 59.

Particulars.	Description.	Number or quantity.	Cubic feet.
(Selection fellings 3,780 ; line-cutting 46, dead standing 81, river 1.)	Sál logs	3,908	156,320
(. fellings)	Sissu logs	531	13,304
(. „ 130, river 4)	Asna „	134	7,392
(Selection fellings, line-cuttings and dead standing.)	Sál sleepers ...	6,265	6,439
Fellings	Dhao axles ...	97	...
(Hollow trees 159, river 17, old stock 15) ...	Canoes or boats ...	191	...
(Fellings, Bahraich forest)...	Miscellaneous poles ...	168	...
(Collections, ditto)...	Mahua flowers, maunds,	1,311	...
(Ditto rivers)	Drift timber ...	1,447	...
	Total { No. ... / Maunds...	12,741 / 2,321	1,83,455

58. The comparison of old forms 54 to 56 are given in the following abstract of form No. 62. Detailed information can be found by referring to the present form No. 62.

Abstract of Form No. 62.

Account of timber and other produce cut or collected by Government agency and brought to sale depôt or sold locally during the year 1881-82.

Particulars.	In hand.		Brought to depôt.		Total.		Removed by purchasers.		Lost or used by department, including transfers, &c.		Closing balance.	
	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.	No.	C. ft.
1880-81.												
Timber	7,037	...	5,752	...	12,789	...	737	...	4,929	...	7,124	...
Golas and poles	4,117	...	7	...	4,124	...	1,526	...	377	...	2,231	...
Canoes and boats	1,046	...	130	...	1,176	...	68	...	14	...	1,084	...
Scantlings	...	38,598	...	99,760	...	1,38,358	...	95,037	...	32,181	...	11,140
Charcoal ... ... Mds.	597	...	$907\frac{11}{20}$	...	$1,504\frac{11}{20}$	...	$907\frac{11}{20}$	...	50	...	547	...
Firewood ... ... "	$12,036\frac{13}{20}$	...	166	...	$12,202\frac{11}{20}$	...	...	...	4,600	...	$8,202\frac{13}{120}$	...
Offcuts ... ... "	...	...	5,623	...	5,623	...	3,074	...	2,549	...	...	...
Total ... No.	12,200	...	6,889	...	18,089	...	2,331	...	5,320	...	10,439	...
Total ... C. ft.		38,598	...	99,760	...	1,38,358	...	95,037	...	32,181	...	11,140
Total ... Mds.	$12,633\frac{13}{20}$	...	$6,696\frac{11}{20}$	...	$19,330\frac{1}{5}$	...	$3,981\frac{11}{20}$	...	6,599	...	$8,749\frac{11}{20}$	...
1881-82.												
Timber ... ... (7124) =	13,358	558,413	8,074	3,35,425	21,432	8,93,838	1,990	72,961	5,438	2,77,528	14,004	5,43,349
Balas and poles	2,231	...	308	...	2,539	...	405	...	236	...	1,898	...
Canoes and boats	1,084	...	237	...	1,321	...	13	...	37	...	1,271	...
Scantlings ... ...(11,140) =	1,88,441 4 stacks.	10,592	114,283	81,510	3,02,724 4 stacks.	92,102	110,559	55,285	25,859 2 stacks.	17,273	166,285	19,092
Charcoal ... ... Mds.	547	...	1,220	...	1,767	...	1,010	...	551	...	206	...
Firewood ... ... "	8,203	...	70	...	8,273	...	8,107	...	100	...	66	...
Offcuts ... ... "	...	...	9,600	...	9,600	...	5,460	...	4,140	...	...	...
Mahua flowers ... ... "	...	...	1,311	...	1,311	...	1,311	...	...	...	...	...
Confiscated and drift wood	...	...	1,447	...	1,447	...	1,447	...	...	...	...	...
Total ... No. and c. ft.	205,114	569,005	124,349	416,935	329,463	985,940	114,414	128,246	31,591	2,95,253	183,458	562,441
Total ... Stacks	& 4 stacks				& 4 stacks					& 2 stacks		2 stacks
Total ... Mds.	8,750	...	12,201	...	20,951	...	15,888	...	4,791	...	272	...

In showing the operations of two years the following changes are necessary:—

The closing balance of timber was	7,124	pieces
Now shewn as	13,358	,,
Difference	6,234	,,

This is because formerly we did not bring the logs into stock till they had been carted to the depôt, but now we have to do so directly they have been cut. In old form 54 the closing balances in the Kheri forests were 6,442,* now included in stock, plus 41 pieces transferred from scantlings to timber, minus 249 scantlings "karis" transferred from timber to scantlings. The above arrangement affects the balance of scantlings, which are now 10,592 cubic feet instead of 11,140 cubic feet.

* These logs will in 1882-83 be taken out of stock and removed by purchasers from the forests or used up in sleeper operations, they being the rejected logs from the Patna fellings :—

3,268
280
2,756
138
6,442
41
6,483
—249
6,234

The stacks of scantlings are composed of small pieces which it is not desirable to count or measure and which are sold by public auction. In future the cubic contents of the stacks will be given.

59. The following abstract of form No. 60 gives detail of timber and other produce received from forests in sale depôts :—

Description.	Produce received.	
	Number or quantity.	Cubic feet.
Sál logs	2,783	146,010
Asna	49	2,712
Miscellaneous poles	168	...
Total timber	3,000	148,722
Charcoal, maunds	210	...

The only authorized sale depôts are Bahramghát, Lucknow, and Dharmapur in the Bahraich Division ; all the rest are forest depôts from which sales usually do not take place.

60. The details of sales of timber and other produce cut and collected by Government agency are given below in abstract of form No. 61 :—

	Description.		Produce sold.	
			Number or quantity.	Cubic feet.
Part I, sold from depôt ...	Sál logs and pieces ...	...	1,628	52,204
	Asna	...	351	15,846
	Sál scantlings ...	...	101,515	48,945
	Asna ditto ...	...	8,487	4 009
	Deodar ditto ...	...	18	5
	Asna off-cuts ...	...	169	152
	Sál off-cuts ... Mds.	...	4,639	...
	Asna ditto ... ,,	...	621	...
	Miscellaneous poles ...	...	292	...
	Canoes	...	8	...
	Mango fuel ... ,,	...	70	...
	Total ... No.	...	112,868	121,161 c. ft.
	Total ... Mds.	...	5,530	...
Part II., sold locally ...	Sál logs	...	99	4,348
	Asna	...	12	563
	Sál scantlings ...	...	370	2,174
	Sál poles	...	16	...
	Dhao axles	...	97	...
	Canoes	...	5	...
	Drift timber ...	...	1,447	...
	Firewood ... Mds.	...	8,037	...
	Charcoal ... ,,	...	1,010	...
	Mahua flowers ...	...	1,311	...
	Total ... Timber, No.	...	2,046	7,085
	Total ... Mds.	...	10,358	...
	Grand Total, Parts I. and II. No.	...	114,414	128,246
	Grand Total, Parts I. and II. Mds.	...	15,888	...

61. The abstract of form No. 65 gives value of timber and of live and dead stock :—

	In hand at commencement of year.		In hand at close of the year.		Remarks.
	Number.	Value.	Number.	Value.	
		Rs.		Rs.	
1. Surveying and other instruments,	154	1,391	155	1,392	
2. Machinery	27	27,181	27	27,181	
3. Tools	4,182	4,147	4,488	4,231	
4. Office furniture	753	2,499	20,760	2,913	
5. Tents and equipages ...	66	2,238	69	2,224	
6. Building materials, small stores, &c	258	1,240	375	1,712	
	623	2,019	1,907	2,492	
7. Miscellaneous	1,087	64,240	...	...	Transferred to timber stock.
8. Boats and canoes	20	460	29	740	
9. Carts	29	52,600	44	83,210	
10. Buildings	8	21,500	7	13,300	
11. Elephants	16	520	15	495	
12. Bullocks	21	210	19	190	
13. Buffaloes					
Total ...	7,244	1,80,245	27 895	140,080	Decrease in value, Rs. 40,165.
Value of timber at sale depôts ...	...	70.247	...	67,408	Increase in value, Rs. 68,343.
	...	1,06,498	...	2,80,145	
Ditto ditto other timber taken on stock under new edition of Forest Code and the value of boats and canoes transferred to timber stock (form 62).	...	1,92,460	...	...	Actual surplus.

One male elephant died by poison. The case was fully reported on at the time. One bullock and two buffaloes also died. The canoes and boats have been transferred to timber stock. There has been decrease of Rs. 40,165 in live and dead stock and an increase of Rs. 68,343 in timber stock, making a total increase in value of stock of Rs. 28,183.

SECTION IV.—FINANCIAL RESULTS.

62. The financial results of the year compared with those of the previous year are as follows :—

Receipts.		Expenditure.		Surplus.	
1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.
Rs.	Rs.	Rs.	Rs	Rs.	Rs.
2,81,980	3,11,145	2,17,135	2,24,506	64,945	86,639

The surplus is more than that of last year; but it is hoped that the results of 1882-83 will be more favourable, as we shall have some 3,000 trees to sell instead of 2,000. The expenses of cutting the former and carting some of them have fallen in 1881-82. More money might have been received had Mr. Rebsch been in his own Division during the latter part of the year.

63. The receipts are given under the different heads :—

Year.	I.	II.	III.	IV.	V.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.
1880-81	1,21,170	1,54,866	3,474	...	2,590	2,81,980
1881-82	1,22,303	1,81,846	4,314	...	2,682	3,11,145

The excess is Rs. 29,165. There is still a slack demand for public works, and the Fatehgarh Gun Carriage Agency have taken nothing during the year. It was

formerly our best customer. There really was Rs. 5,000 besides which had to be written back for the year 1877.

64. The divisional receipts and expenditure are herewith given :—

Divisions.	Receipts.		Increase or decrease in present year.	Expenditure.		Increase or decrease during the year.
	1880-81.	1881-82.		1880-81.	1881-82.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	...	...	...	16,473	17,863	+1,390
Pilibhit	9,024	8,879	−145	14,947	12,586	−2,361
Kheri, including Bhira and Babramghát.	1,68,920	1,60,910	−8,010	1,28,424	1,37,024	+8,600
Bahraich	30,165	60,337	+30,172	31,020	27,947	−3,073
Gonda	30,753	21,117	−9,636	8,542	10,232	+1,690
Gorakhpur	43,118	59,902	+16,784	17,629	18,854	+1,225
Total ...	2,81,980	3,11,145	+29,165	2,17,035	2,24,506	+7,471

In Direction the increased expenditure is owing to increase of Conservator's pay. In Kheri the revenue was very much the same, Rs. 5,000 above mentioned having had to be written back. Increased revenue in Bahraich is owing to Mr. Pinder's better experience, and the increase in Gorakhpur owing to the good work of Mr. Campbell and his subordinates. Expenditure; in Kheri the increase was principally for sawing sleepers and preparing bridge of boats.

65. The sums under A., "Conservancy and works," and B., "Establishments," are thus detailed :—

"A."

Year.	I. Timber and other produce removed from forests by Government agency.	II. Timber and other produce removed from forests by consumers or purchasers.	III. Confiscated drift or waif wood.	IV. Revenue from forests not managed by Government.	V. Rent of leased forests, &c.	VI. Live and dead stock.	VII. Communications and buildings.	VIII. Demarcation improvement, &c.	IX. Miscellaneous.	Total.
	Rs.	Rs.	Rs.			Rs.	Rs.	Rs.	Rs.	Rs.
1880-81 ...	71,262	6,687	172	...	...	8,245	33,928	14,648	656	1,35,599
1881-82 ...	68,869	8,683	438	...	...	7,047	36,059	18,401	1,250	1,40,747
Total ...	−2,393	+1,996	+266	...	...	−1,198	+2,131	+3,753	+594	+5,148

"B."

Year.	I. Salaries.	II. Travelling allowances.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
1880-81	66,103	11,234	4,099	81,436
1881-82	66,706	12,675	4,378	83,759
Total ...	+603	+1,441	+279	+2,323

The excess in "B.," Establishments, is owing to promotion of Conservator and Mr. Campbell.

	Rs.
66. The cash profits of the year are	86,639
That is—Receipts...	3,11,145
Expenditure	2,24,506
Surplus	86,639

This is all that is necessary for the information of the Government of India, but for the information of the Local Government the following figures may be of interest :—

Particulars.	Amount.
	Rs.
Receipts from timber and other produce removed from the forests by Government agency	1,22,951
Deduct expenditure on account of above, including share of establishment ...	89,582
Leaves a profit on timber operations of	33,369
Other receipts were	1,88,194
Cost of revenue collection with share of establishment came to	62,822
Leaving a surplus of ...	1,25,372
	33,369
And a total clear profit from all sources of	1,58,741
From which must be deducted cost of works of conservancy and improvement with share of establishment	72,102
Leaving a cash surplus ...	86,639

And the value of assets has been increased, Rs. 26,531.

The following table shows the estimated profit of the year's operations, taking assets into consideration, in the form desired by the Local Government :—

Particulars.	Amount.
	Rs
Receipts of the Department during 1881-82	3,11,145
Expenditure	2,24,506
Surplus ...	86,639
Value of timber at commencement of the year	3,43,445
Ditto at close of the year	3,47,553
Difference in favor of the year ...	4,108
Total surplus ...	90,747
Value of live and dead stock at commencement of the year	1,16,005
Ditto ditto at close of the year	1,40,080
Difference in favour of the year ...	24,075
Total surplus ...	1,14,822
Deduct— Amount of revenue realized on account of previous year	2,248
Balance ...	1,12,574
Add— Outstanding of the year	67,764
Total ...	1,80,338
Add— Amount written back for the year 1877	5,000
Balance ...	1,85,338
Deduct— Amount due on transaction of the year, but not yet paid	7,136
Balance ...	1,78,202
Deduct— Outstandings at commencement of the year	60,032
Balance showing actual profits of the year ...	1,18,170

67. Owing to the new form of the Code timber operations are now only debited with a fair share of establishment and expenses.

68. In appendix B. will be found a statement showing the detail for produce given to the privileged villages in Bahraich, Kheri, and Gonda ; they are if anything under the mark, and from these figures, together with the reduced grazing rates to privileged villages and free grazing to numerous Tharus, I estimate that at the very low rate of royalty more than one lakh of rupees yearly are given away which might, if necessary, be shown in the financial results of the year.

69. The outstandings due to the Department on account of revenue are Rs. 31,716-10-2. Half of this will probably be irrecoverable on account of grazing dues in Bahraich for former years ; the rest is realizible.

CHAPTER II.

PILIBHIT DIVISION.

SECTION I.—AREA AND BOUNDARIES.

70. The area remains practically the same. The portions of grants 2, 16, and 17 that were to be made over to grantees have been marked off by the Collector in presence of the Forest Officer, who has demarcated them by lines cut on the ground, and the portions so demarcated are in possession of the grantees. During the year 9¾ miles of boundary ditches were made; of this 4 miles were ditching 5′ × 3′, the remainder the ordinary forest ditching 3′ × 3′; making a total of 8 miles of the former and 38 of the latter completed in the past three years.

SECTION II.—PROTECTION AND IMPROVEMENT.

71. (*a*) *Roads and bridges.*—About 16¾ miles of new road were made ; 74 miles of forest and 8 of district road were repaired. Altogether some 91 miles of new road have been made in the past three years, adding much to the facility of inspection and traffic.

(*b*) *Buildings.*—Two third-class rest-houses were completed, making seven completed since Pilibhit has formed part of the Oudh Circle ; a first-class double-storied rest-house has been started at Mustafabad, which will be the centre of fire conservancy when the forest block is extended. Substantial outhouses have also been built at Mahofe and Mustafabad.

(*c*) *Other works (wells, rivers, &c.)*—Four new wells commenced last year and two commenced this year were completed ; these and the seven old ones, making 13 in all, were cleared out and the water rendered fit for drinking purposes. They are a great boon to the public, the working parties, and establishment.

(*a*¹) *Demarcation.*—The new villages mentioned in Section I. were demarcated.

(*b*¹) *Compensation for land and rights.*—An effort was made to buy or exchange some land which would have simplified boundaries, but the negotiations fell through.

(*c*¹) *Surveys and working plans.*—Measurements to ascertain the growth of sál were made in a plot of two acres at Kali Lar, in a half-acre plot at Mahofe and in quarter-acre plots at Gybi and Karriaghát. The average increase in girith has been about 1½ inches, showing that it takes two to three years to make an inch of radius (the trans-Sarda working plan assumes 10 years, or for safety's sake 13⅓ years, to make an inch of radius), but the stems measured are almost all comparatively young and short, coppice shoots from old stools, so that no true induction of their rate of growth as large mature trees, supposing they could survive to be such, can be made, though something may be learnt regarding the structure of the wood and the rings formed in it.

(*d*¹) *Plantations.*—No regular plantation works have as yet been taken in hand, only some experimental sowings of sissu in a small nursery at Mahofe for transplanting, and on the top of new banks thrown up from the ditching mentioned in Section I of this Division, to see if sissu can be grown without artificial and expensive watering. The sissu seed was sown in May, and some of it was germinating when Mr. Ponsonby left the Division in June.

(e^1) *Protection from fire.*—In fire conservancy the same plot was taken up as last year with an additional piece adjoining. It has been very unsuccessful owing to a fire coming from the Tarái forests; the fire leapt over a cleared and burnt road 75 feet broad, but arrangements are being made to have a burnt strip of 300 feet between the two forests to prevent a like accident. The grass in these forests is very dry, there being large expanses of treeless forests; and the season was remarkably dry, there having been only little rain in September and October, and no cold-weather rains to speak of. A square mile was actually burnt between the breaks in the rains in August last.

72. (f^1) *Other works (creeper-cutting, improvement fellings, reproduction, &c.)*—Some experiments in coppicing have been made both in sál pole forests and glades of stunted sál locally known as "*chándars.*" In the sál pole forests, which, have in nearly all instances sprung from coppice shoots, four acres were taken in hand and treated in the following manner: the four acres are contained in a square surrounded by a fence and ditch to keep out animals, in strips 15 feet broad; all trees that would not improve naturally were cut over flush with the ground; intermediate strips of untouched forest were left 45 feet broad between the strips cut over, as protection from sun, frost, and ærial dryness; 4 of the 7 cut over strips were hoed up to give air and moisture to the soil and roots and to give any seed that fell a chance of germinating. So far the experiment has been successful. It was cut over in March and new vigorous coppice shoots are many feet above ground. They are in bunches at present, but it is hoped that the strongest shoot will have taken the lead and will take the nourishment from the smaller ones which will in time wither away, die and disappear. In the "*chándar*" one acre only could be dealt with. The Inspector-General of Forests, in para. 106 of his "Suggestions regarding Forest Administration, North-Western Provinces and Oudh," dated 1st November, 1881, has described the peculiarities of the "*chándars*" of Pilibhít and Bhira. They exist here only in large patches, but stunted sál is also found in and under mature sál forests, as will be described in the Bahraich Division (Ikonah). This stunted sál seldom gets above 4 or 5 feet in height, when it is cut over by frost or fire. It may with protection only get into larger stuff, but I doubt if without artificial treatment it will ever make fair forest, and even then I do not think it can be made available as timber. But if we can get the trees to seed, nourish with their cast-off leaves and protect with their live ones the seedlings that spring up, and then remove the old stems as props or firewood, a useful end will have been served. The stem of the stunted sál runs along the ground, apparently under it, but not really so, the earth is heaped up against it by wind and rain; each year a crop of switches comes up to be cut over by frost or fire, and the stem lengthens slowly on the surface of the ground, seldom even getting thicker than a man's arm. The experiment has been to cut off this stem on the level of the ground above the tap root, so as to give the new shoot which will rise from the cut part direct communication with the tap root instead of having the sap circulating through the gnarled and decayed horizontal stem, for the horizonal stem, though only 2 or 3 feet long, may be 50 or 100 years old. I have known some of these "*chándars*" now for 18 years, and there is little, if any, apparent difference in their appearance. The new shoots were appearing above ground in the end of April. The land was dug up to allow air and rain free access. Sál flowered and seeded freely: so, it is hoped, the fire having taken place early in the year, that some reproduction from seed has taken place, through the hot winds were unfavorable for the germinating of the seed.

SECTION III.—YIELD AND WORKING.

73. The yield of the forest products is given below. They are slightly less than they were last year; but Mr. Ponsonby, who has charge of the Bhira Sub-Division also, labored under the great disadvantage of having his Ranger ill and absent for the most important part of the year. The forests were received over by this Department in an exhausted condition, no money having been spent on their improvement, and the only revenue obtainable is from dead and inferior trees, grass and minor produce and this

revenue will for a long time have to be but small, most of the neighbouring population getting all their forest produce free of charge :—

	Rs.	a.	p.
Timber	1,318	15	3
Firewood	3,018	14	3
Charcoal	1,897	11	6
Grass	234	1	0
Drift and waif	869	11	6
Grazing dues	610	1	11
Minor forest produce	929	5	3
Total	8,878	12	8

There are no departmental operations properly so called, everything being removed by purchasers, who pay but a very small royalty for the produce removed.

SECTION IV.—FINANCIAL RESULTS.

74. These are about the same as last year, the deficit being Rs. 5,691 against Rs 5,992.

		Rs.	a.	p.
A. II.	...	3,066	11	3
III.	...	201	8	10
½ VI.	...	686	15	0
½ VII.	...	1,980	6	6
½ IX.	...	95	12	0
½ B.	...	962	1	9
14/27 Direction charges	...	992	5	11
		7,935	13	3
A. VIII.	...	1,966	14	10
B/2 ½ A. (VI+VII+IX)+		3,675	3	4
14/27 Direction charges	...	992	5	11
		6,634	8	1

	Rs.	a.	p.
Receipts	8,878	2	8
Cost of revenue collections and share of establishment ...	7,935	13	3
Leaving a balance of	942	15	5
Against which must be set cost of works, of formation, improvement, and protection of forests, with share of establishment ...	6,634	8	1

The Division has been in the Oudh Circle for three years, and it is hoped that the principal pioneering works will be finished in a couple of years, after which time it is expected that the works of improvement will be more directly reproductive, particularly if the proposed railway from Pilibhít to Sitapur is made and wood fuel used in the engines, by which we shall have a profitable market for the outturn of coppicing operations.

BHIRA SUB-DIVISION (KHERI).

SECTION I.—AREA AND BOUNDARIES.

75. The area remains the same, some formalities remaining to be completed with regard to the land exchanged for the Hardoi grants ; they have not yet been formally gazetted as reserved forests. Though the grants on the Katna have been several years in the possession of the Forest Department, it was not considered advisable to gazette them as reserved forests, pending the consideration of the Katna reclamation scheme, and four of the most southerly of them were, in accordance with Government Orders Nos. 1017 and 1018 of 29th April, 1881, handed over to the District Officer for disposal: 13 miles 6 furlongs of ditching were made along the boundaries, replacing the less lasting *dághbel*. It is proposed to do about 20 miles annually till the whole is completed.

SECTION II.—PROTECTION AND IMPROVEMENT.

76. (*a*) *Roads and bridges.*—A new road 5 miles 2 furlongs was made from Kishanpur rest-house to Phutá Kua on the Sháhjahánpur boundary; completing, within forest limits, the through communication between Marha, the head-quarters of this sub-division, with Mustafabad and Mahôfe in the Pilibhít Division, making a good road between Lakhimpur and Pilibhít, without crossing any large nálas. Fifty miles 5 furlongs of old road were repaired, as also three bridges.

(*b*) *Buildings.*—New third-class rest-houses have been made at Bhira and Kukra and outhouses built at Marha ; there are now two first-class and four third-class rest-houses in the sub-division.

(c) *Other works (wells, rivers, &c).*—Four new wells were built, making eight in all up to date, besides four old ones which have been made serviceable. With reference to the dryness of the season, it may be remarked that the Marha tank, which had not been dry since it had been dug over three years ago, dried up in December before the hot weather commenced ; it is now being deepened.

(a^1) *Demarcation.*—See Section I.

(b^1) *Compensation for land and rights.*—Rs. 13-2-2 were paid for one acre of land at Bhira for the rest-house there. It was considered advisable to build the house in the open for convenience of supplies and for sanitary reasons, as the only available site in the forests would have been in the vicinity of swamps and cut off from the west wind.

(c^1) *Surveys and working plans.*—Sál trees were measured in the following plots: one acre south-east of Marha, a quarter acre north-west of Marha, a quarter acre near the Bargad chauki, a quarter acre near the Kishanpur rest-house. The acre plot of some 130 trees gave about nine-thirteenths of an inch increase in girth in the year, or about nine years to form an inch of radius ; but as the 130 trees will not arrive at maturity, the growth of the survivors, which are now suppressing the weakly ones, both is and will be much more rapid. The other three plots do not give any reliable information, but owing to the greater number of the suppressed trees the average growth is, if anything, slower. A peculiarity has been noticed both in this sub-division and in the coppiced forests of Pilibhít and Gorakhpur, *viz.*, that in some cases the measurements in June are somewhat less than those of the March and December preceding. Whether the trees have shrunk from the absorption of moisture in the bark or sap wood for the formation of leaves, flowers and fruits—whether the bark has been reduced by white-ants (it has in some cases)—or whether the measuring tape stretched owing to the hotter weather, will, be a subject for future observation.

77. (d^1) *Plantations.*—Only a small experimental plantation has been made for sissu transplants at Marha; and sissu sowings have been made on artificial banks at various levels, both to see the success or otherwise of the sowings without irrigation and the effects of the rains and floodings, as the natural habitat of sissu, as before explained, is in low ground subject to inundation. As I shall have to refer to these artificial banks in the other Divisions, I will describe them here. Trenches are dug 20 feet long, 4 feet broad at the top, one foot at the bottom, and three feet deep ; the earth is thrown on one side two feet distant from the trench (so as not to be washed back again by the rain or water) ; the earth is made in a bank 20 feet long, 1½ feet high, and about 4 feet broad at the top and 7 feet at the base. There is a space of 10 feet between the end of one trench and the commencement of another, so as not to stop natural drainage, and also for economy, as there must be some spaces between the trees in the lines. The lines of banks are 30 feet apart from centre to centre, as this space will give the trees plenty of room to develope their branches and roots. The 10-feet spaces are also in the same alignment, both for facilitating the flow of drainage in the rains and for inspection and work in the dry weather. The seeds are sown on the bank in the dry weather. It is hoped they will germinate soon after the first fall of rain, and having a soft material for 1½ feet, their roots will go through this in a few weeks (in artificial sowings with irrigation, seedlings a few days old were 4 inches above and 9 inches below ground) and leave them time to make their way through the old grass surface and get their roots deep into permanent moisture before the next cold-weather rains, when they will require no artificial waterings.. It is hoped from the moisture from above and the reserve of water in the ditches that the seedlings will soon penetrate this grass surface and the earth beneath it softened by the absorption of water from the ditches ; if this be successful only thinning operations will be afterwards required. These banks with their adjacent ground covering 900 square feet, there will be some 46 to the acre ; and if we can get three trees on each bank, averaging in the lines 10 feet apart, there will be 138 trees per acre, which will be more than sufficient for the final crop.

78. (e^1) *Protection from fire.*—The area of the fire protection is the same as last year—15,712 acres, and up to the end of the financial year it was saved; but a fire in May destroyed 9,427 acres. The cause of the fire was not discovered, but it is supposed that it was owing to the carelessness of the fire-watchers. It unhappily commenced at the north-west side of the fire-block. Mr. Ponsonby was unfortunately away in the Pilibhít Division when the fire occurred, or it might have been less, as he might have got more assistance from the inhabitants of the neighbouring villages.

79. (f^1) *Other works (creeper-cutting, improvement fellings, reproduction, &c.)*—A four-acre plot was taken up for experimental coppicing near Marha as in Pilibhit, and 15 feet lines cut, 45 feet of forest being left untouched between the lines. The soil is poor, and the same results cannot be expected as in the Mahofe plot, which is rich; the results will, however, be seen next cold weather. This plot was not fenced in and some of the tops of the new shoots were eaten off by deer. In the six-acre plot experimented on by Mr. Wilmot in 1876, which I visited twice in the year, the growth on the two acres cut clear over has failed to reproduce itself well, the frost has done much damage: in the two acres cut over in lines 20 feet cut and 20 feet left the young coppice shoots are on an average 20 feet high and generally straight, but in many instances two or more shoots have come from one stool; the weaker ones were cut out and the best ones left: the same condition was noticed where only bad and crooked stems had been thinned out on another acre: the soil is poor, and the experiments would have been more successful, I believe, if they had been made on richer soil, and a similar experiment in forest when the soil has been enriched after some years of fire conservancy will, I think, give better results. Creeper-cutting will have to take place in many parts of these forests when time and money can be spared.

SECTION III.—YIELD AND WORKING.

80. These forests, like those of Pilibhit, have not been many years under forest management and no regular departmental operations have taken place, the dead reserved and green unreserved trees and minor produce being taken out by villagers or purchasers, and till the railway or canal comes near there will not be a large market for thinnings, there being still large quantities of land covered with forest in the possession of private individuals. The actual receipts are less than in the preceding year, being Rs. 6,408 against Rs. 7,162, and some Rs. 1,000 of this year's receipts were for produce sold last year; but on the other hand the free produce given to villagers living within three miles is increasing, and there is a loss of some Rs. 1,200 yearly by the reduced grazing rates.

	Rs.	a.	p.
Timber	604	11	4
Fuel	220	1	9
Grazing	3,826	15	9
Minor produce	1,709	9	0
Waif and stray	47	2	0
Total ...	6 408	7	10

More cattle grazed during the year, but it will take some time under present circumstances for the revenue to rise as rapidly as I expected.

81. SECTION IV.—FINANCIAL RESULTS.—

	Rs.	a.	p.
A II.	1,646	15	5
½ A (VI+VII+IX)+$\frac{B}{2}$ ...	7,971	7	6
$\frac{11}{27}$ Direction charges ...	992	5	11
Total ...	10,610	12	8
A VIII.	1,607	7	7
½ A. (VI+VII+IX)+½B.,	7,971	7	6
$\frac{11}{27}$ Direction charges ...	992	5	11
Total ...	10,571	5	0

	Rs.	a.	p.
Receipts	6,408	7	10
Cost of revenue collections with share of establishment ...	10,610	12	0
Giving a deficit of... ...	4,202	4	10
Against which must be charged cost of formation, improvement and protection of forests, with share of establishment ...	10,571	5	0
Giving a total deficit of ...	14,773	9	10

'The whole of Mr. Ponsonby's pay and allowances—Rs. 10,293-14-7—have been charged against this sub-division. But the forests are resting, only waste produce being taken out, and money is being spent for their present and future welfare. Their capital value is increasing, and I trust that the Government will in making any railway cause wood fuel to be used, as it will not only help the Forest Department to a market for its thinnings, but also keep the money spent on fuel in the province, instead of paying other railways for carriage and coal companies for the raw material, if coal be used.

KHERI DIVISION (TRANS-SARDA).

SECTION I.—AREA AND BOUNDARIES.

82. The area remains the same. One mile of ditching was done, which completed all the outside boundary. The Tharu villages adjoining and inside the forests are demarcated by posts with *dúghbels*, but it is not considered advisable to commence the ditching in the forests till the suit of the Rája of Khairigarh against the Secretary of State is decided.

SECTION II.—PROTECTION AND IMPROVEMENT.

83. (*a*) *Roads and bridges.*—The roads in this Division being nearly complete, no new ones were made. 230 miles of road in the forests were repaired at a cost of Rs. 2,903. The road from the forests to Rámnagar, 8 miles, which had been badly cut up by traffic, was also put into good order. The bridge over the Soheli was replaced and kept up free of charge to the public. Four new bridges were made and 20 bridges repaired. Boats for the bridge of boats at Srinagárghát on the road from Palia to Bhíra were brought up from Bahramghát and all materials for anchoring and for roadway prepared, but the bridge was not erected, the District Officer thinking it better to postpone the making of it till October next. The Government has, on the District Officer's recommendation, ordered the funds to be at the disposal of the district authorities after paying a certain amount for the use of the bridge ; but as the arrangement is all in favor of the district and much against the Forest Department, a separate reference will be made, when the Government will have before it both sides of the question.

(*b*) *Buildings.*—The double-storied first-class rest-house at Dudua was completed in a very workmanlike manner, though Mr. Allan had to overcome many difficulties in the way of sickness of workmen and running short of materials owing to rain in past year. The second-class double-storied rest-house at Naurangabad was also completed. Substantial tiled out-offices have been built at Dudua, Fort Gori Shah, Sathiana, and Bilrain for the shelter of servants, forest subordinates, workmen and purchasers. A second-class double-storied rest-house has been commenced at Bankatti, the north-east boundary of the Dudua closed block, distant about nine miles from Dudua; it is also on one of the Nepal timber routes.

(*c*) *Other works (wells, rivers, &c.)*—The three wells commenced last year were completed, also one at Naurangabad; three new wells on the outskirts of the new fire-conservancy block of Kusambhá were commenced, as also one at the Bhadraula line fire chauki in the Dudua closed block, and one at Bankatti for the new rest-house. Nine wells were also cleared out. The Soheli was cleared of snags, the cost being much lower than it was last year. When we have time to clear the sides of the river of trees there will be very few snags.

(*a*[1]) *Demarcation.*—12½ miles of Nepal boundary line were cleared, 15 feet broad. The District Officer wants the road to be widened to 30 feet. The question of payment has been referred to Government for orders, as there is a good deal of similar boundary in Bahraich and the cost would be very heavy. Where there is traffic 15 feet is managed with little difficulty ; but, unless traffic increases largely, a broad strip of 30 feet would be expensive to keep clear of jungle.

(*b*[1]) *Compensation for land and rights.*—There was no compensation for land or rights.

(*c*[1]) *Surveys and working plans.*—At the suggestion of the Inspector-General of Forests one of the quarter-acre blocks was enlarged to two acres and the crooked and

useless trees in the added $1\frac{3}{4}$ acres cut out. Experience has shown that more suppressed trees should have been eliminated; the other three quarter-acre blocks were also measured, as also the 24 trees mentioned in paras. 14 and 43 of last year's report and 15 more trees added to the list. The 24 trees gave an increase of $36\frac{6}{8}$ inches against $39\frac{6}{8}$ inches of last year; this gives each tree an average of 1·53 inches against 1·65 inches last year, or very little over four years per inch of radius. The 15 new trees show still more rapid growth, having made a total increase of $33\frac{4}{8}$ inches, or $2\frac{7}{30}$ inches each tree, or an inch of radius in less than three years. In the four quarter-acre blocks the growth has been good.

		Inches.
No. 1, 24 trees, give	... ...	$23\frac{6}{8}$
„ 2, 20 „ „	... ...	$22\frac{6}{8}$
„ 3, 30 „ „	... ...	$23\frac{6}{8}$
„ 4, 34 „ „	... ...	$29\frac{4}{8}$
Total 1 acre, 108 trees	... ...	$99\frac{4}{8}$

or very nearly one inch increase of girth for each tree, or between six and seven years to make an inch of radius, but as a number of these trees are suppressed, the average of the dominant trees is far greater. My assumption for Kheri is that dominant trees make an inch of radius in five years, or ·2 radius a year or 1·256 inch, say 1·25 inch or $1\frac{2}{8}$ inches girth. Now, of the 108 trees there are 21 which have made over $1\frac{2}{8}$ inches and 9 that have made $1\frac{2}{8}$ inch; so allowing 21 trees under $1\frac{2}{8}$ inch (which is less than the real number) to make up for the trees over $1\frac{2}{8}$ inch we have 21 + 21 + 9 = 51 trees per acre now growing at the rate of one-fifth of an inch radius per annum, many of which will have to die out before the age of maturity is reached. In the $1\frac{3}{4}$ acre block added there are 204 trees, of which all but 16 are sál. This gives 113 sál trees per acre. These are different sized trees. The growth is dense and much slower than in the quarter-acre plot. There were more trees standing before the cutting out took place, so we may hope for better growth next year. There were 15 trees over $1\frac{2}{8}$ inch and 12 of $1\frac{2}{8}$ inch, or say over 42 trees averaging one-fifth of an inch radius a year or 24 trees per acre. The growth of Kheri sál, I consider, shows that there is a bright future for these forests. The measurements tend, I think, to prove what was observed last year, that nearly the whole growth is made from June to December and little (if any) between December and June.

85. (*d*[1]) *Plantations.*—The planting is as yet only experimental. The sissu sown in April, 1880, and referred to in clause 2 of para. 43 of last year's report, were planted out or replanted. The seeds were sown in pots, in beds about 5′ × 10′.

The beds were dug two feet deep, the earth excavated and the bottoms laid with flat flooring tiles or bricks set in lime mortar; the beds were in two lines about two feet apart from each other; there was a partition of earth left about one foot broad in the lines between each bed. The pots were built up of semi-cylindrical tiles. The pots were packed as close together as possible; the whole bed was filled with soil, well watered to settle the earth, and the seeds sown in the pots in the bed. The object of the pots was to keep the roots of each individual plant separate, and the object of the masonry flooring was to prevent the tap roots getting too deep to dig out. As reported last year the one-year-old seedlings were about six feet high. On visiting the nursery in November it was found that some of the plants had made extraordinary growth, many trees being 10 feet high and one tree was fully 15 feet high and 9 inches girth at one foot from the ground. Whilst some had made this rapid growth, others were only about 6 feet high or less. The rapid and slow growth were soon accounted for. When emptying the beds, the large trees were found either to have forced their tap roots through the joints of the masonry or had run along the surface of the flooring till they came to the edge, when they sent their roots down 5 to 6 feet or more; the section of the roots that were broken off at the masonry bed level being in some cases half an inch in diameter. As they came out some 4,724 were planted either in four lines 15 feet apart with 15 feet spaces along the north and west of the roads in the Dudua closed block, here chiefly grass, or in a four acre square 15 feet apart both ways. Most of the large

trees with broken tap roots died, whereas the moderate sized ones with unbroken roots lived. The porcupines did much damage for a time, cutting the young transplants over a few inches above the ground eating a small piece of stem. The transplants were put into holes dug 3 feet deep and well watered. Mr. Allan reports that, though there were a good many deaths, he has filled up the vacancies and that in the setting in of the rains all were alive. Mr. Wilmot had in April, 1880, also sown a large bed without pots, with sissu. The flooring was continuous and only about 18 inches below the ground level. Here we had a good supply of 3 to 5 feet plants whose roots could not get beyond the flooring. In a similar bed planted with khair the checking the tap roots had killed all the seedlings except a few which managed to get their roots through the masonry. The land planted up is covered with grass from 4 to 10 feet high in the rains and cold weather, so I am afraid that only the vigorous transplants over 3 feet at the setting in of the rains will live, but this remains to be seen. In digging out the pots in January the partitions between the beds in the lines were cut away, so that two long trenches 5 feet broad remained. As said before, all the seedlings had been removed. On inspecting these trenches in the month of April they were nearly covered with a young growth of sissu suckers, some three feet high, coming up generally from the sides and partitions where the flooring was discontinued, but in many places from the interstices of the flooring, showing the vigorous growth from the broken vertical roots that were deep in the ground. Mr. Allan reports that many of these suckers had attained the height of 5 feet in the commencement of June. The 18 inch bed was dug up and the seedlings not required for planting out replanted, to see if they will make fibrous root growth. Eight acres were taken up for experimental sissu sowing on artificial banks as described in Bhira, and khair was also tried; there had been some showers before the regular rains set in and the sissu was germinating. These eight acres will probably be flooded by the Soheli in the rains, and it is hoped that these artificial banks will imitate the silt deposits on which sissu is naturally sown. The bambu seedlings sown in 1880 and transplanted in 1881 along the Dudua-Palia road have only grown slowly owing to the dry season. Mr. Allan has planted out some more bambu roots from the Dudua plantation.

86. (e^1) *Protection from fire.*—The area attempted to be protected was 65¾ square miles, but this year was very bad for fire-conservancy, there having been no regular winter rains. The work of burning the grass plains commenced about two months before the usual period. I have to report that 15¼ square miles were burnt. The first fire was on 1st December, in burning round the forest the wind suddenly turned round and carried the flames into the closed block, but only a few acres of grass were burnt. The second fire was on the 28th of March in the Dudua closed block, caused by the carelessness of some carters, some four miles of grass and tree jungle were burnt. Two other large fires occurred—one in the Dudua block, of about 4,000 acres, caused by sparks from a smouldering tree that had not been put out in the parts burnt outside the protected area, and which smouldering tree was lit up again by the strong wind; a fire of nearly the same extent occurred in the Kusambha block, probably owing to carelessness of the people at the fair held near Fort Gauri Padshah.

87. (f^1) *Other works (creeper-cutting, improvement fellings, &c.)*—Sál seeded well. The natural reproduction of sissu (of about 1873) in the lower Dudua closed block is making vigorous growth and will soon require another thinning.

On a silt deposit north-west of the Dudua Palia road, but just out of the closed block, Mr. Allan discovered a large number of sissu seedlings that had come up probably during the last rains; they had not been seen till the buffaloes belonging to a cattle station had browsed and beaten down the grass. We promptly changed the locality of the cattle station and put watchers on the plot which next season will be included in the closed block. Creepers were cut in the sál forests from Dudua to Kuaghattia along the high banks at a cost of Rs. 101-0-6. In digging the trench for the artificial banks alluded to in para. 85 it was necessary first to clear away the grass 6 to 10 feet high; this was done by burning. There were some old sissu trees on the ground,

and they were in the way and 100 trees were to be sent to Bahramghát: so the trees were felled and removed. In digging the trenches the surface roots of the sissu were cut, and Mr. Allan reports that a good growth of sissu suckers have sprung up on the side of the trenches furthest away from the stem of the felled trees.

The surface or horizontal roots of the sissu have formed suckers in the same way that the vertical or deep roots of the seedlings described in para. 85 have done; the growth of them will be watched. An experiment has been made of propagating by sucker or root shoots in the Panjab.* We left the stumps and cut the side roots. I am sending some root stumps to Bahramghát, to see if they will bring a remunerative price for small articles of turnery; and if they do, in felling sissu next year, I shall fell by digging out the roots instead of felling at one foot or two feet from the ground. If the suckers promise well for timber trees, which I am afraid they will not, I will in felling out some sissu trees have a trench dug round them, say 10 feet distant, with a view to practise this way of reproduction. The improvement fellings at Dudua are doing well; they will soon want touching up, removing extra stems and inferior trees that are doing damage, &c.

SECTION III.—YIELD AND WORKING.

88. One hundred new canoes have been made from hollow logs for departmental rafting. In conformity with the suggestions of the Inspector-General of Forests the selection fellings of sál were 2,500 instead of 2,000 trees, they took place in the blocks bounded by the Dudua-Masan Khamb line and the Jumunhia-Bhadraula line and yielded 2,776 logs and 1,004 pieces. The timber is not very large, but is sounder than that felled last year. 500 sissu trees along the Soheli, either dead, dying, in danger of being washed away by the river, or in places not needed for reproduction, were felled for disposal at Bahramghát; about 101 aseyna trees were felled for the same market. Carting operations commenced earlier than usual, and carters were numerous; in the financial year 2,051 logs were carted to depôt. There was no outstanding from carters last year. 2,582 logs were rafted from Dudua, and all except eight, lost in transit, reached Shitabághát; 333 were left at Dudua, as the rains stopped early: the cost was Rs. 3-1-0 per log; 3,623 were despatched from Shitaba for Bahramghát. Mr. Battie did good work in pushing on the rafting in November and December, and only 300 logs remained in Shitaba Depôt on the 31st March. The Ranger, Lila Dhar, put obstacles in Mr. Battie's way, or the work would have been done sooner. He has given much trouble with his accounts. For this disobedience of orders and general bad conduct he has been dismissed from the Department. The rafting was easy from Shitaba, as the main stream had come near the depôt. But great difficulties were experienced on account of the want of water in the river near Bahramghát; the boats had to pass Bahramghát several miles down the main stream and then be towed against stream up one of the branches. This caused extra expense, the logs costing about Rs. 4 apiece, making with the rafting from Dudua a little over Rs. 7 a log. As an experiment I had some sleepers of small size cut from dry logs and line fellings, &c., lying in the eastern forests. It is found that sleepers 6′ × 6″ × 4″ cut from logs carted to depôts outside the forest can be stacked for about eight annas a piece. 7,445 were stacked in two grass sheds, covered with a coating of mud and cow-dung. 119 logs unsaleable on the spot at Suthiana were cut up for an indent 3,111·80 cubic feet for the District Engineer, Kheri. The leavings, some 938·25 cubic feet, have been utilized for the flooring and beams of the boat bridge. 762 dry sál trees were removed by purchasers. As the natural deaths do not supply the demand, I propose the killing of a few where they are overcrowded or dying; this will have to be done by an officer. There are thousands of sál trees in the forests that will not improve and are doing harm to the young growth. Fourteen permits were given for 9,486 pots of catechu at nine annas a pot. The manufacture is carried on in the eastern forests and on the Soheli forests between Dudua and Suthiana. Working on the Inspector-General's assumption of 10 rings of radius a year, or for safety's sake 13½, we can fell 3,000

* Para. 8, Panjab Forest Report, 1880-81.

1st-class trees in a year, leaving 6,000 crooked and unsound. If the growth of the dominant trees is proved to be one-fifth of an inch radius a year, our fellings can be greatly increased but till it is clearly ascertained what the growth really is, we have the stock of 6,000 crooked and unsound trees accumulated yearly for the past 20 years—say a lac of trees of 1st class size over 6 feet on girth. If we can remove them with profit, I believe the sooner these are cleared out the better These trees, though not fit for sending down as logs, could, I believe, be made to yield 2,000,000 cubic feet of sawn timber in scantlings and sleepers; and with the increased growth under fire conservancy, I believe the Kheri Division could supply the railways of Oudh and the North-Western Provinces with most of the sleepers required for original works and repairs; the only thing required is time to organise the sawing in the forests and the rafting and carting to depôts.*

SECTION IV.—FINANCIAL RESULTS.

89. Rs. 9,206-12-7 were received for timber removed by Government agency, the other receipts being Rs. 33,488-3-10; total Rs. 42,695-0-4. This is less than during last year; but the dead timber in the forests is getting scarcer, and the Fatehgarh Gun Carriage Agency expenses being much reduced, very little money now comes to the Forest Department from that source, whereas we used to have a steady customer of from half to a whole lac of rupees in the Agency. The reduction of grazing rates to privileged villages but slightly affects the receipts from grazing, there being many cattle stations that come from long distances.

The financial results of the Division with its depôt at Bahramghát are given below :—

Receipts from timber removed by departmental agency—

	Rs.	a.	p.
A. I.	51,814	10	9
½ VI.	797	1	7
½ VII.	5,048	0	1
½ IX.	254	4	2
½ B	6,880	14	10
Direction charges to share of Kheri $\frac{8}{27}$.	1,323	2	7
	66,118	2	0
Whole A+B Bahramghát charges.	21,248	9	1
Direction charges to share of Bahramghát depôt $\frac{3}{27}$.	1,984	11	10
	23,233	4	11
	89,351	6	11
A. II.	1,360	14	0
III.	172	5	6
½ VI.	797	1	6
½ VII.	5,048	0	1
½ IX.	254	4	3
½ B	6,880	14	10
Direction charges $\frac{2}{27}$ ...	1,323	2	6
	15,836	10	7
A. VIII.	4,290	9	5
½ VI.	797	1	7
½ VII.	5,048	0	1
½ IX.	254	4	2
½ B	6,880	14	9
Direction charges $\frac{2}{27}$ ...	1,323	2	7
	18,594	0	7

				Rs.	a.	p.
Kheri ...				9,206	12	7
Bahramghát ...				1,11,806	8	10
	Rs.	a.	p.	1,21,013	5	5
Kheri timber expenses ...	66,087	5	0			
Whole of Bahram ghat ...	23,233	4	11			
				89,351	6	11
Leaving a profit on timber operations of (or about Rs. 15 a tree felled)				31,661	14	6
Other receipts were ...				33,488	3	9
Costs of revenue collections were,				15,836	10	7
Leaving a profit of				17,651	9	2
And a total profit of ...				49,313	7	8
From this whole must be deducted cost of works of conservancy and improvement, with share of establishment				18,594	0	7
Leaving a net surplus of ...				30,719	7	1

The cost of collection appears much more than last year—Rs. 9,629-9-7; but the difference is principally caused by the share of communications and buildings, Rs. 5,048-0-1, being now added, which was not done formerly. The cash surplus is Rs. 30,719-7-1 against Rs. 49,364-6-10, but Rs. 5,000 of this difference is owing to that sum being written back for 1877. Some Rs. 4,000 have been expended in cutting and carting sleepers, the revenue from

* NOTE.—Since this report was sent to the press I have submitted proposals for sawing sleepers for the Patna-Bahraich Railway and boards for Government opium chests.

which will come in 1882-83. Expenses were incurred for the bridge of boats without corresponding revenue coming in, and the fellings have been increased to 2,500 trees from 2,000, increasing felling and carting expenses, the increased revenue not accruing till 1882-83.

We are working far within our resources, and if a market be got by the making of railways, a much larger surplus may be expected.

BAHRAMGHAT DEPOT DIVISION.

SECTION I.—AREA AND BOUNDARIES.

90. Area and boundaries remain the same.

SECTION II.—PROTECTION AND IMPROVEMENT.

91. *Compensation for land and rights.*—The 3¾ acres rented from the Raja of Ramnagar, on which aseyna logs had been stacked, are now given up, the logs having been disposed of: so that there will be no further expenses on this account.

SECTION III.—YIELD AND WORKING.

92. The logs landed from Shitaba were 2,832 in number, and the cost of landing four annas per log. The timber was fair in quality. The balance of indents at the commencement of the year was 4,175 cubic feet. Indents received amounted to 27,744 cubic feet, of which 645 cubic feet were cancelled, 24,443 cubic feet were executed, leaving a balance of 6,831 cubic feet to be completed, of which 1,104 cubic feet were cleared off on the 19th May, 1882. The indents completed this year were about 5,000 cubic feet more than in the past year. Some aseyna indents could not be supplied as the timber had been sold in the log. Selling asyena in scantlings hardly pays, as the cost of carting and rafting is the same as for sál and of sawing more, the timber being harder, the price Re 1-8-0 against Rs. 2-4-0 for sál, and as the demand is unsteady, when there is no demand the logs greatly deteriorate by exposure. Great loss is incurred by the numerous sizes of scantlings required by the different officers of the Public Works Department, so that short portions of rejected scantlings cannot be utilized, but have to be resawn. I am making arrangements with the Chief Engineer of these provinces to see if a smaller number of standard sizes cannot be introduced into works, so that a certain amount of ready-sawn stuff can be sent from the forests, saving in carriage and utilizing crooked timber which it is difficult to cart and raft. By doing this I expect to be able to reduce the prices of most of the timber some 20 or 25 per cent., and with the same or greater profit to the Forest Department. The table below gives comparative statement of the work done by saw mills during last and this year: —

Year.	Value of work done at old rates.	Expenditue.	Surplus.
	Rs.	Rs.	Rs.
1880-81	9,296	8,532	764
1881-82	11,977	8,700	3,277

The cost was Rs. 15-8-6 per hundred cubic feet against Rs. 18-15-11 last year.

The old boiler was repaired and did better than in 1880-81. A new boiler has been sanctioned and a greater head of steam will be able to be maintained and more work done. The expenses have been kept down and were only Rs. 21,248 against Rs. 28,095 in 1880-81. Some sissu is being sent from Kheri and Bahraich which will be sold in the log.

93. SECTION IV.—FINANCIAL RESULTS.

	Rs.	a.	p.
The receipts were	1,11,806	8	10
Expenditure	21,248	9	1
Surplus	90,557	15	9

Compared with Rs. 83,221-3-3 of last year, the actual receipts and expenditure were Rs. 5,000 more than here shewn, that sum having to be written back for timber

supplied to the Fatehgarh Gun Carriage Agency, erroneously debited in March, 1877; as all the timber came from Kheri Trans-Sarda, the results of the Division and its depôt have been shown in para. 89.

BAHRAICH DIVISION.

SECTION I.—AREA AND BOUNDARIES.

94. The area remains the same, but I believe the area when properly measured will be found to be more than that given in the returns, and that the difference will be found in (Section VIII.) the Sohelwa forests which lie at the foot of the Nepal hills. In ditching 70 miles 6 furlongs 244 feet were done at a cost of Rs. 1,676; 10 miles remain to be completed in the Chakia forest where the ground is very hard: they, it is hoped, will be done during the present rains; 1,509 sál posts were erected at a cost of Rs. 375. The Balrampur boundary was continued to be stumped to the Sohelwa road at a cost of Rs. 106, and is now in most places practicable for horses and elephants; it will probably never be made into a line of traffic; it is now completed from the Sohelwa road to the Gonda boundary.

SECTION II.—PROTECTION AND IMPROVEMENT.

95. (*a*) *Roads and bridges.*—24½ miles of new road were made in the Gabbapur forests in Section VIII. Some of the roads were from cultivation to the foot of the hills for getting out produce; and some crossing them, converging on Sohelwa, for facility of inspection and fire conservancy, &c.; they are on high ground and at present are passable for horses and elephants; in some places a little more requires to be done to make them passable for carts. These roads will help greatly to open out the forests. 297 miles 2½ furlongs of old road were repaired at a cost of Rs. 1,681; 14 bridges were repaired at a cost of Rs. 88; and materials have been collected for a bridge over the Kaim nala on the road from Bhinga to Gabbapur and Sohelwa.

(*b*) *Buildings.*—The Kharaincha and Sohelwa first-class single-storied rest-houses have been completed; the cost was about Rs. 3,500 each. The third-class rest-house at Murtiha was completed at a cost of Rs. 352; also a superior rest-house for office establishment at Sohelwa at a cost of Rs. 906. The Bharta third-class rest-house is incomplete only as regards its timber fittings. The various other rest-houses in the Division were repaired, and in some places bath-rooms and cook-houses added.

(*c*) *Other works (wells, rivers, &c.)*—Fifteen wells were cleared out. The wells at Kharaincha, Sadullaganj, and Sohelwa were completed, averaging about Rs. 312 each.

96. (*a*[1]) *Demarcation.*—See Section I.

(*b*[1]) *Compensation for land and rights.*—Nil.

(*c*[1]) *Surveys and working plans.*—Measurements were taken in a two-acre plot and two quarter-acre plots in the Motipur range and two quarter-acre plots in the Bhinga range; the measurements give as shown in last year's report, para. 52, the same slow growth as compared with that of Kheri. In the two-acre plot many suppressed trees will again have to be taken out, and only the most promising left, there still being 273 trees, or 136½ per acre. In para. 52 above mentioned I alluded to the poverty of the soil, but we may have to look to something else for the slow growth. Either the trees with their slow increase of girth may be, if not suppressed, making a great deal in height, or the stems may have sprung from old stools.

97. (*d*[1]) *Plantations.*—On visting the Nishangarah sissu plantation in February, I found a good many of the transplanted seedlings dead; they had been killed by the grass and other causes. The grass was cleared on my visit and a fire coming from outside had burnt the grass between the lines; but I have no doubt in my own mind that the error was made in planting out seedlings too small and young, which could not successfully struggle with the grass. In the seedling nursery there were still a number of plants about 20 months old, averaging 6 to 12 feet in height. I had a trench 6 feet deep and 4 feet broad dug along one of the rows of seedlings, and saw that the roots of even the middle-sized ones were 6 feet long and more. I desired Mr. Pinder to have the trees in the nursery dug out carefully 6 feet deep and planted in the blanks in holes 6

feet deep. When the roots were over 6 feet they were cut off slantingly with a sharp knife. The season was a very early one, and the seedlings had in some cases strong fresh buds. 250 were planted out between the 7th and 12th February with as much earth as possible adhering to the roots; two *gharras* of water were poured into the bottom of the hole and two more into the earth used in filling up and the transplants were watered every day for a week and every other day till the setting in of the rains; 41 were sub-soil watered* and the rest surface watered and all are reported alive. Mr. Pinder, who had charge of the experiment and who was four years in the Panjab Plantation Division, reports that he has never seen anything so satisfactory. The watering was continued to make certain of the success of the transplanting, but I believe that the trees would have lived with fewer waterings. In our forest plantations watering is the great expense. The sub-soil watered transplants struck the earth sooner than the others did. In the Bhinga range 400 sissu with 4 feet roots—the roots were very much longer, but had to be broken off—were transplanted to the moist upper bed of the Kaim nala in November, 1881; they were seedlings of May, 1880. Only a few deaths took place on the higher ground. They were watered nearly every day, and to protect them from the attacks of deer and monkeys were fenced with thorns. These and the transplants in Nishangarah were in open ground or nearly so. The sissu seedlings that were transplanted into the Kakardari closed block were mostly alive, 84 having died out of 748; but the soil is hard, the surface watering not allowing the water to get far enough into the soil, besides which the ground is covered with a dense growth of thorns and is in many places shaded by large trees, and the transplants were small. Mr. Pinder in June, 1881, sowed some sissu seed at Sohelwa, but owing to its having been planted in shade the growth has been very poor compared with seedlings sown in the open.

98. (e^1) *Protection from fire.*—Only small additions were made to the regular fire-protected area. Owing to the dryness of the season the fire conservancy commenced in February; it has however been very successful. There were three fires—two in Mohpur, one in Bhinga. The two former were near the same place and were probably lighted by Shikaris from Nipal or neighbouring villages; about 572 acres were burnt. In Bhinga the fire was evidently purposely done, as the fire commenced inside the block and at a considerable distance from any road. Of the unprotected area 24 square miles were burnt in Section VIII., Sohelwa forests, owing to fires from Nepal. I hope however to defend these forests by running a contour line at the foot of the hills and then burning between it and the Nepal boundary line. The making of this line is now practicable owing to the opening out of the forests by roads described in part (*a*) of this section.

99. (f^1) *Other works (creeper-cutting, improvement fellings, &c.)*—The reproduction in the block of bambus at Salarpur protected from cattle is doing well. Almost all the old bambus are dead and round many of the dead clumps there is a dense growth of seedlings; in other places where the shade was less, the seedlings could only be found where sheltered and protected by the dead stems themselves. I noticed reproduction also, but not in so favourable a degree, in the few and small clumps of the male bambus at the edges of the "damar." In cultivation also bambus had seeded, and where cattle had free access I noticed that there were but few seedlings, and these only where they were protected by the dead growth itself, which prevented cattle getting at them. There has hardly been time to see the effects of closing against cattle the small block in the north-east corner of the Bharthapur forests, but I do not expect much from it, unless a heavy flood from the Koriali brings down a coating of silt with it, and the ground generally is rather high. Sál seed was very plentiful, but owing to the strong west wind a good deal of seed fell early which is unfavourable for germination, especially in the hard soil of Bhinga and parts of Sohelwa. The thorn

Note.—Bambus 7 feet long with a hole made in the knots were buried vertically in the pit with the plants and gharras placed mouth upwards on the tops which were 1 foot above ground; each gharra had a hole in the bottom with a small piece of rag in it, which allowed the water from the gharra to drop slowly to the bottom of the hole.

hedge in block 3 of Bhinga is doing well and is effective in keeping out cattle. The soil in the block is improving; seedlings have not however yet made much progress.

SECTION III.—YIELD AND WORKING.

100. The yield has been much more favourable this year, Mr. Pinder knowing the ground much better and also the wants of purchasers; but still more might have been done had the Division its proper complement of two officers. Mr. Pinder sold some green sál trees which he marked himself in the Sohelwa forests; some also were cut in the Nishangara forests. The bulk of the revenue under IIa was from unreserved and dead reserved wood. Though the grazing dues have been reduced, the figures are brought up by the realization of arrears, and some Rs. 11,000 were realized by the sale of permits for preparing catechu at nine annas a pot. Besides the money realized under AII., almost a like amount was given free to the privileged villagers.

SECTION IV.—FINANCIAL RESULTS.

101. The receipts are almost double of last year, mostly for the reasons given in the last paragraph. Under I., Rs. 259 were received from the sale of old boats and Rs. 843 from fuel, but these operations are very small and belong to past years.

	Rs.	a.	p.
AII. ...	1,999	3	8
½ VI. ...	482	10	3
½ VII. ...	3,960	13	6
½ IX. ...	67	13	6
½ B. ...	5,646	6	2
$\frac{3}{27}$ Direction charges	1,984	11	10
	14,141	10	5

	Rs.	a.	p.
AVIII. ...	5,451	6	3
½ VI. ...	482	10	2
½ VII. ...	3,960	13	1
½ IX. ...	67	13	7
$\frac{1}{27}$ Direction charges	1,984	11	10
	17,593	13	7

	Rs.	a.	p.
The receipts were of rom timber, &c., removed by Departmental agency,	1,367	15	1
Deduct expenditure under AI. ...	180	12	7
Leaving a profit of	1,187	2	6
Other receipts were	58,969	5	4
Making a total of	60,156	7	10
The cost of revenue collections with share of establishment was ...	14,141	10	5
Leaving a surplus of	46,014	13	5
Against which must be charged the cost of works of conservancy and improvement, with share of establishment	17,593	13	1
Leaving a surplus of	28,421	0	4

BAHRAICH (EXTRA) IKONAH.

102. By the orders of Government Mr. Rebsch was deputed to demarcate and reorganise the forests of the Maharaja of Kapurthala situated in the Bahraich district, on the borders of Gonda; Mr. Pinder, in charge of Bahraich, having more in hand than he could well manage. I visited the forests with Mr. Rebsch and a full report will be sent hereafter. Mr. Rebsch joined about the 1st of February and had not completed the work on the 1st July, when he had to go to the Forest School at Dehra. The forests are in a worse condition than any of the Government forests, with the exception of some of the grants lately handed over. They had been cut over about 4 to 6 feet from the ground, and only in one place, Balapur, are there any good poles. There are five different kinds of sál forests; 1*st*, very old gnarled trees; 2*nd*, Balapur, good poles; 3*rd*, crooked trees that bear seed, one foot diameter; 4*th*, crooked trees which scarcely bear seed, 9 inches diameter; 5*th*, crooked trees which do not bear seed at all, 6 inches diameter. I think the only systems that can be profitably followed are to cut over the old trees in No. 1, gradually getting up a crop of seedlings; in No. 2, thinning judiciously and pruning; in Nos. 3, 4 and 5, cutting out in strips, leaving a certain amount of standards per acre for future seed crops, getting a straight growth from coppicing level with the ground, and going over the whole in 20 or 30 years as experience shall dictate. In order to ascertain the state of growth

many scores of roots have been dug up and examined. In the Forest No. 1 stunted sál that did not get beyond switches was found; in No. 4 straight shoots coming from the end of the horizontal stem, alluded to in Chapter I., Section (*g*) of this report, were found; and in No. 5 still better growth, but a good many broke at the horizontal stem when pulled hard. In the whole forests there was not a sál tree to be found 6 feet in girth and 80 feet high, but in one place in cultivation I measured a sál tree that had originally formed part of the forests 14 feet in girth at 5 feet from the ground, evidently hollow and bad, and 82 feet high, the mango grove of Basantpur adjoining having trees 88 feet high, and showing what the ground could bear if the trees proceeded from seedlings and were fairly treated; the adjoining dwarfed forest hardly reached 30 feet in height on an average.

103. A trial plot of about 10 acres has been selected in each forest, ditched and fenced, and about one acre in strips has been cut over in each plot with a view of seeing how the seed will germinate where there is any, and how the trees will coppice when cut over flush with the ground; besides this, Mr. Rebsch surveyed and mapped the northern block of Ikonah (about 20 miles circuit), made 19 miles of demarcation lines and about six miles of cross-roads.

GONDA DIVISION.

SECTION I.—AREA AND BOUNDARIES.

104. During the year four grants—Glynn, Moneypur, Sajni, and Jankinagar—were added to the Nawábganj forest, of which Ramgarh formed the nucleus; they contain about 6,738 acres. No boundary work was done owing to Mr. Rebsch's deputation to the Ikonah forests of Bahraich.

SECTION II.—PROTECTION AND IMPROVEMENT.

105. (*a*) *Roads and bridges.*—In the Chandanpur sál forests, adjoining the Ara Nala, a new road from Chandanpur to Rehra, six miles in length, was made to form one of the boundaries of the new Chandanpur Home Block for conservancy. From Mr. Rebsch's absence the making a contour line similar to that mentioned as proposed for Bahraich [Section II. (*a*)] had to be postponed. Without such a line the conservancy of the Chandanpur Home Block will be imperilled by fires from Nepal. 44¾ miles of old road were repaired and 34 nalas had their banks sloped and made passable for elephants at a cost of Rs. 384-6-0.

(*b*) *Buildings.*—The lower story of the first-class double-storied rest-house at Chandanpur was finished, though there have been great difficulties in getting and keeping workmen owing to the remoteness of the place. The third-class rest-house at Ramgarh in the Nawabganj forests was completed at a cost of Rs. 597-11-9. The third-class rest-house at Bhagwanpur, built in 1869-70, was repaired, as also were forester's chaukis..

(*c*) *Other works (wells &c.)*
(*a*¹) *Demarcation.*
(*b*¹) *Compensation for land and rights.*
(*c*¹) *Surveys and working plans.*
(*d*¹) *Plantations.*
} No progress can be reported under these heads.

(*e*¹) *Protection from fire.*—Organized fire conservancy has not been taken into hand owing to lines and other pioneering work not being completed; but I regret to have to report that the following areas of unprotected forest have been burnt out of a total of 140 square miles:—Section I., 1½ square miles; Section II., 20 square miles; Section III., 27½ square miles; Section IV., 19½ square miles; total 68½ square miles. When Mr. Rebsch was present there were no such fires. As shown in the last part of para. 56 of report for 1880-81, the seedings of sál and dhao were thriving; now they have been a good deal burnt over. In Sections III. and IV. very few of the fires came from Nepal and these were quickly put out. In Section IV. fires took place 15 or 20 times, and Mr. Rebsch attributes them to the "*Ahirs.*" The absence of Mr. Rebsch

from his Division has caused Government great loss. In the Nawabganj forests, consisting now of about 14 square miles, there were numerous small fires, but only about a square mile was burnt.

(*f*[1]) *Other works (creeper-cutting, improvement fellings, reproduction, &c.)*—The khair trees that were cut over for catechu in 1880-81 have thrown up coppice shoots averaging 4 feet long in May; the stools from this year's operations were also showing shoots the same month. Sál seeded well. Mr. Rebsch dug up some of the roots of sál seedlings (presumably one year old) that had been burnt and found that they had tap roots from 3 to 4½ feet long: so, as the tap roots have not been injured, there is every hope that the seedlings will shoot up again from the surface of the ground.*

SECTION III.—YIELD AND WORKING.

106. A small indent was supplied to the District Engineer. With this exception almost everything was removed by purchasers. The principal source of revenue was dead reserved wood; the quantities are given below and realized about Rs. 12,000:—

	C. feet.
Dry sál	8,572
Dry asna	8,895
Dry sissu	137
Dry and drift haldu	806
Green unreserved timber	...
Jigna, kumbhi and jamun	1,960
	20,320

The manufacture of catechu was continued and yielded Rs. 2,117. There is no waste here as there is in other forests, the people taking the parts too small for catechu-making for posts and poles at remunerative rates. There is a good deal of produce that can be taken out when roads are made and the Forest Divisional Officer can look after the sales; the exports are steadily increasing.

The free gifts to privileged villages are estimated at from Rs. 6,000 to Rs. 7,000.

SECTION IV.—FINANCIAL RESULTS.

107. Though at first sight there appears a falling off of receipts, it must be remembered that the grazing dues of 1880-81 consisted largely of arrears paid by the Maharaja of Balrampur, for the grazing dues are Rs. 3,528 for 1881-82 against Rs. 14,186 for 1880-81. Taking these into consideration, it will be seen that there has generally been an increase in the different sub-heads of receipts:—

	Rs.	a.	p.
A. II.	354	5	0
III.	64	0	0
½ VI.	275	2	5
½ VII.	1,457	5	10
½ B.	3,004	3	5
11/27 Direction charges ...	992	5	11
	6,148	0	7
A. VIII.	338	14	6
½ VI.	275	2	5
½ VII.	1,457	15	10
½ B.	3,004	3	4
11/27 Direction charges ...	992	5	10
	6,068	9	11

	Rs.	a.	p.
The receipts were ...	21,117	7	10
The cost of revenue collectoins with share of establishment was ...	6,148	0	7
Leaving a balance of ...	14,969	7	3
From which must be deducted cost of works of conservancy and improvement, with share of establishment	6,068	9	11
Leaving a cash surplus of	8,900	13	4

**Note.*—I give the dimensions of a yearling sál seedling that Mr. Rebsch sent me:—
Height above the ground 7 inches; depth extricated 44 inches.
The seedling had about 5 leaves. The stem at ground level was about one-tenth of an inch diameter, tapering to a fine top. At the point just below ground there were 4 or 5 fibrous root half an inch long; the tap root thickened to 3 inches down, where it was about double the size it was at ground level; it then tapered for some 9 inches when it was as thick as a hair pin; it then rapidly got thinner till at the bottom it was of the thickness of a fine sewing needle. The root was probably several inches longer. The soil was sandy, and even to get the root as it is great care had to be taken. There were only about three hair-like side-roots under ground besides the fibrous ones mentioned.

If the grazing dues of this and last year are deducted, the surplus is in favor of 1881-82.

GORAKHPUR DIVISION.

SECTION I.—AREA AND BOUNDARIES.

108. These remain the same as last year. The intention of forming the grass lands into reserved forests has been gazetted. The portions that are to be given up for cultivation are now being marked off. Compensation will have to be given for some lands that have been cultivated, but which for conservancy operations it is considered necessary to take up..

SECTION II.—PROTECTION AND IMPROVEMENT.

109. (*a*) *Roads and bridges.*—About five miles of divisional block lines have been stumped and will be made into 15-feet roads. The old road from Chauk to Daibhár was repaired and two new miles added to communicate with the Daibhar rest-house. The Chauk and Sakhui road, eight miles, has been completed ; by this the inspecting officer can travel the road in three hours instead of taking the whole day, as formerly was the case. Total 18 miles of old repaired and 12 miles new made. A bridge over the Malao swamp was twice repaired, the traffic being very great: over it another bridge is in course of construction ; this will greatly help direct traffic from the northern forest to Chauk, the Malao being impassable for carts and elephants on account of the "phasun" or fluid mud in the swamp.

(*b*) *Buildings.*—The second-class rest-house at Daibhár has been completed; the Madhaulia second-class rest-house has been roofed and only requires plastering ; and the second-class rest-house at Bánspar is approaching completion. Great difficulty has been found in obtaining labor owing to the sickness which has prevailed in the district. Mr. Campbell deserves much praise for what he has done. The other rest-houses and out-offices were repaired.

(*c*) *Other works (wells, rivers, &c.)*—The wells commenced last year at Daibhár and Madhaulia have been completed. A new well has been commenced at Bánspar. The old wells at Rámgarh and Sakhui were cleared out. Owing to press of work and sickness there was no snag-clearing in the Peás and Rohin rivers.

(a^1) *Demarcation.*—The grass lands not having been finally made over to the Forest Department, no works of demarcation were commenced ; but if the Government approves, an application for the services of Mr. Nicholson will be made to demarcate the forests this cold weather. Mr. Nicholson has had so much experience in the work, and works so well, that I think he should be preferred to anybody else.

(b^1) *Compensation for land and rights.*—None has yet been given for the reason stated in Section I. of this Division, but will probably have to be given in 1882-83.

(c^1) *Surveys and working plans.*—Ninety-five sál trees were measured in a ¼ acre block near Ramgarh; this gives 380 trees per acre. Three trees died during the year ; of the 92 remaining 15 made over 1 inch increase of girth (*i.e.*, less than six years to 1 inch of radius) and 32 others half an inch or over (less than 12 years per inch of radius). Of the sissu planted in 1871-72 by Assistant Conservator Shaikh Mohi-ud-din, the increase of girth of 110 trees amounted to $186\frac{6}{16}$ inches, or 1·7 inch per tree. The greatest increase was nearly 4 inches in one tree. This growth is exceedingly good, and calculating at the rate of 1·7 inch girth, or four years per inch of radius, it would only take 48 years to make a first-class tree of 6 feet girth at 6 feet from the ground.

110. (d^1) *Plantations.*—About 60 acres of sissu were planted on the high banks of the Tura Nadi and Diwachaur. The greater part of the seedlings are alive, but I am afraid the transplants are too small and will have difficulty in struggling with the grass. Eighty acres were planted out at Madhaulia on abandoned cultivation ; these are somewhat larger and are doing well, They were planted 30 feet apart to cover the land before the grass made headway. Future operations will be limited to replacing

failures and filling in to 15 feet apart each way. Twenty acres at 15 feet apart and 60 acres at 30 feet apart were planted on abandoned cultivation at Sakhui. The future operations will be the same as at Madhaulia. The plantations made about 1877 are not doing so well as could have been wished for; the transplants being too small, the grass chokes them and hinders their growth.

110. The secret of the success of Shaikh Mohi-ud-din's plantation—some six acres—is that it was planted on the site of an old cattle-station, where the soil had been enriched and the rank grass killed down. The plantations along side made by Mr. Amery are not half so good.

111. Mr. Grant's plantation—some six acres—at Madhaulia is in short grass (probably old cultivation); the trees are about 8½ feet apart each way and want thinning out.

112. Experience has, I think, shown that in making large plantations, where we cannot pick out such favourable spots as Shaikh Mohi-ud-din and Mr. Grant did, we must plant large seedlings that will at once top the grass. Tall seedlings mean long roots, and to get their roots out unbroken it is necessary to confine them both sideways and at the ends, and arrangements are being made to get the growth confined in long cylindrical pots. The tile machine referred to in para. 60 of last year's report I found turned out cylindrical 2-inch tiles, but only semi-cylindrical 5-inch tiles. The men working the machine unfortunately damaged the side that turned out the 2-inch pipes, and the semi-cylindrical tiles warp in drying, not forming a tight pot for the roots. Mr. Angus Campbell of Roorkee supplied us with a die-plate for turning out cylindrical tiles, but owing to cholera having been very bad at Ramgarh Mr. Alexander Campbell has not been able to do much. The machine is a horizontal one and not fitted for turning out long pipes, the friction on the table after coming through the die-plate breaking up the clay. I hope however by a simpler contrivance which I have in preparation to turn out cylindrical tiles 6 feet long strong enough for pots, for they will have to be sacrificed in preference to damaging the roots. I had some seedlings of April, 1881, in the nursery at Ramgarh dug up, water being freely applied all the time, and the roots were over 6 feet long, the plants being about the same height. Mr. Campbell has sown some 500 pots of 3 feet long made of three feet semi-cylindrical tiles with burnt earthenware saucers to prevent the roots striking into the ground, and 400 pots of 6 feet long made of semi-cylindrical tiles with similar saucers, two or three inches of broken tiles being filled in at the bottom for drainage.

113. The bambu plants in the open have just lived and may make progress during the present rains, but the ones in shade and in rich soil have made strong growth. Some of the sissu transplants that I put into low damp ground in 1879 and which were not afterwards watered have done well; many have died, but the cause of the failure was evidently their not having long enough roots, or the roots were damaged in transplanting.

114. From the experience now gained I would not recommend the attempt of trying exotic trees in our plantations; we have such good and valuable trees, if only cultivated the right way, they will answer all our requirements. There is no harm in trying small garden experiments with them, but in a forest point of view I do not think they will pay. A few sál seeds were sown in the open on old nursery ground and were not watered; they made tap roots long enough to tide them over the hot weather.

115 (e^1) *Protection from fire*—The fire-conservancy operations have been very successful, only some 50 acres having been burnt out of 73,540. One fire—15 acres—was caused by men who had been cooking fish carelessly leaving their fire burning; two other fires of 15 and 20 acres respectively were caused by travellers probably incautiously throwing out the fire from their "chillams."

(f^1) *Other works (creeper-cutting, improvement fellings, reproduction, &c.)*—It has been noticed that the sissu in the plantation at Ramgarh have not seeded

during the last two years; they are close together and require all their strength to get up to the light and kill out the weaker ones. Trees of the same size, and even younger and smaller ones, seed when they have plenty of air and ground free round them. Creepercutting was carried on near Madhaulia, but had to be stopped for want of labor. In Ramgarh the cutting out of the parasite "bandha" was continued, but the men were so attacked with red ants that they struck work. It will probably be the best way to cut down the trees that have their crowns affected with this parasite, only destroying the parasite when it is on the side branches which can be lopped off. 750 fifty acres were thinned in the usual manner, leaving the best trees about 10 feet apart; 450 acres were in block No. 8, Ramgarh and 300 in Tilkonia.

SECTION III.—YIELD AND WORKING.

116. The produce was generally taken out by small landholders, who in the cold season thus find a profitable use for their carts. 2,400 trees that had formerly been tapped for resin were taken out from the northern forests. The rest of the yield was aseyna and miscellaneous poles and dead and dying sál. Such thinnings taken out by purchasers, fuel and the thinnings from Ramgarh cut by the Department, but taken out by purchasers, with thatching materials, are the principal things yielded at present. Except in the northern forests there is no wood of a size to be sawn up.

The improvement fellings at Ramgarh and Tilkonia cost Rs. 1,301-15-9 and yielded Rs. 12,915-14-6, an increase of Rs. 3,800 on last year. The surplus was Rs. 11,613-14-9, or about Rs. 16 an acre.

117. SECTION IV.—FINANCIAL RESULTS.

	Rs.	a.	p.
A I. ...	50	4	2
A II. ...	255	1	6
½ A VI. ...	378	14	7
½ A VII. ...	1,404	9	7
½ IX. ...	4	9	7
½ B ...	5,113	3	9
14/27 Direction charges ...	992	5	10
	8,199	1	0
A VIII. ...	4,745	10	9
½ VI. ...	378	14	7
½ VII. ...	1,404	9	7
½ IX. ...	4	9	8
½ B ...	5,113	3	10
14/27 Direction charges ...	992	5	10
	12,639	6	3

	Rs.	a.	p.
The receipts were ...	59,901	10	1
The cost of revenue with share of establishment ...	8,199	1	0
Leaving a balance of ...	51,702	9	1
Cost of improvement with share of establishment ...	12,639	6	3
Leaving a cash surplus of ...	39,063	2	10
Against a surplus of ...	25,489	3	7

of the last year. This is a fine surplus for a small Division like Gorakhpur and could only have been obtained by good work on the part of the Divisional Officer and subordinates; but in fairness to the other Divisions in the province of Oudh it must be stated that Gorakhpur is not hampered with the rule of free produce to villagers living within the forests or three miles from the boundaries.

GORAKHPUR (EXTRA).

118. Besides doing his regular work, Mr. Campbell helped the district authorities in arboricultural work, taking care of the nursery at Ramgarh. The progress made will be furnished in the arboricultural department. New fencing is required for the efficient protection of the 12 acres plot; though the supervision is better than it could be in Gorakhpur, the jungle grass causes difficulties and expense. The pine-apples that escaped pigs, nilgai, frost and cattle are doing well; and in places Mr. Campbell sowed linseed and mustard to keep down the grass. Some grafted mangoes suffered much from a very late frost which came when they were uncovered. 47,580 seedlings of jack, mango, jamun and mahua were raised, there being 15,130 deaths (about 30 per cent.) Eight miles of road from Kusumi to Hatta were planted out on both sides during the rains of 1881, and it is reported that the plants are thriving. The 12 acres plot for grafted mangoes will probably be kept up, but a large nursery near Gorakhpur will

not be profitable; it will be much better, as proposed by the Collector, to have nurseries near the sites of roadside operations to save carriage. This agrees with my plan of six feet roots. In forest plantations, the plants being near together, a nursery would be made for every 10 or 20 acres, or say 4,000 trees; for roadside nurseries the plantations would be about the same size—trees at 30 feet apart on each side of a road taking 3,520 trees. If the nurseries were made every 10 miles 3,520—say 4,000—would do. The carriage being never more than five miles each way, the nurseries might even be made smaller. If I can only make the 6 feet pots as cheaply as I hope to do, I trust the roadside planting will be greatly cheapened and the planting made certain and unseemly blanks done away with.

CHAPTER III.

UNRESERVED FORESTS.

Blank.

CHAPTER IV.

GENERAL REMARKS.

119. I would most respectfully suggest that the comprehending and reviewing forest reports is more difficult than those of other Departments, because the reviewers have a better acquaintance with the working of other Departments, and without a local knowledge of the forests the difficulties that Forest Officers labor under are not fully appreciated.

120. In Oudh a great portion of the work is done departmentally, and we have the Nepal market, a much larger one than our own, to compete with: so that the price obtained for the same timber is less in Oudh than in the Central and School Circles, where there is no such competition.

121. It has been my object for the past 18 years to make the forests more accessible, to improve communications, and to preserve the health of the establishment and work-people by having good drinking water and places of shelter, and I believe the number of miles of roads made, wells dug, and rest-houses completed will show that progress has been made in the matter. The boundaries are now nearly all well defined, and with these pioneering works in the state of progress they are, more time and money can be spared for improving and extending profitable growth of timber and products. I have done everything in my power to obtain revenue from products which if not removed would have been wasted. At the same time the capital value of the forests has been largely increased and nothing like the annual yield has been taken out, allowing Government to draw largely on the forests when there is real necessity. The improvement of the forests has been going on steadily by fire-conservancy and protection, and the officers of the superior staff have done their best to aid me.

122. The working with the district authorities has done much good, and though there is now a certain amount of decentralization, I think that the District Officers would still take more interest in the work if the forest work was not separated from the regular district work, and if the districts profited more directly than they do at present from the surplus of forest revenue in the district in which the forests are situated.

123. I have referred to the closing of some of the forests against hunting and shooting in the fire-conservancy season. Protection of the forests has, I believe, increased the number of deer, but on the other hand there are a larger number of beasts of prey (tigers and panthers) which will help to keep down the number. Messrs. Allan and Battie this year killed some 16 tigers and six panthers within 15 miles of Dudua. But if the beasts of prey are killed indiscriminately the deer will increase too rapidly; on the other hand, if the deer are killed without limit, the beasts of prey will destroy cattle and, in case of not getting them, human beings, as has been found to be the

case in wild districts in which game and cattle are not in sufficient numbers. I consider that with the protected blocks there is not the same necessity for the game going out of them as there was when the forests were fired, and for a time there was nothing in the forests for them to eat and they had to go to cultivation for food. The closed blocks now afford cover to the beasts of prey, which formerly were driven from the depths of the forests to the edges bordering cultivation, where there are swamps that cannot be burnt.

124. During the past 20 odd years there have been only three European continental trained officers in the Oudh Circle—(1) Mr. Hill, who stayed about a year learning the language and the rudiments of Indian Forestry; (2) Mr. Wilmot, who was for some six years in the Oudh Circle; and (3) Mr. Dansey, who only joined for about two months in the year under review: so that if good work has been done in the Oudh Circle it cannot all be attributed to the continental trained forest officers. I make this remark, as I see that Colonel Pearson, a former Indian Forest Officer, has in a lecture delivered 1st March, 1882, * before the Society of Arts in London reiterated an unjust, incorrect, and controverted statement that the progress made in forest conservancy in India is due to the officers educated in the continental schools. As I think was fully shown in the report of these provinces for 1880-81, the forests in the provinces under His Honor give more revenue for their area than any other forests under the Government of India, and they have had, till the formation of the Forest School quite lately, little (if any) assistance from the young gentlemen who have learnt some theoretical forestry in France, and who are not till some time after their arrival in this country of any use in practical Indian forestry.

125. Mr. Dansey only joined for two months, so that I could not properly judge of his work. The other officers of the Circle have worked well. Mr. Ponsonby, though unsuccessful in his fire conservancy, has made progress in pioneering works and revenue collections. Mr. Allan has had charge of the most important Division and carried out all works to my entire satisfaction. He has now been some six years in his present grade. The partial localizing of forest officers has affected him injuriously, and though I have recommended him for promotion, the limiting of the number of officers in the grade does not allow of his being promoted, unless transferred to another province; but I trust that Government will find means of rewarding him. Mr. Campbell has worked hard and successfully, having made a splendid revenue and done extremely well in works of conservancy and improvement; he attended the course of instruction at Dehra and was promoted in the year to Officiating 3rd grade Assistant Conservator, and I trust he will be soon confirmed in that appointment.

Mr. Robsch has worked with great judgment, and has not only raised a good revenue in his own Division, but helped in the re-organization of the Kapurthala forests. He too has received promotion to Officiating 3rd grade Assistant Conservator after the close of the year under review. Mr. Pinder has since he has been in charge gained much experience and given much attention to his work and succeeded in raising the revenue, which for the past two years had from unavoidable changes and circumstances fallen off. I have recommended him for promotion, which I hope he will shortly obtain. The promotion of the Department is different to that of all others, and no charge allowance can be granted to an officer acting in an appointment which is properly the charge of a Deputy Conservator or Senior Assistant. Mr. Battie, though only in charge of the Kheri Division for three months in the recess, has done good service in the charges to which he was attached. A good deal of the success of the fire conservancy and experimental plantations in Kheri is due to his labors, and I shall be glad if he is rewarded with promotion.†

Babu Kanhya Lal has greatly pleased me with the economy with which he has worked the Depôt; he has, I believe, given satisfaction to Public Works officers and the

* "Indian Forester" for April, 1882.

† Mr. Battie has since been promoted, but no special orders have been passed for Mr. Pinder, on leave, though recommended by the Local Government.

general public who indent on the Bahramghat Depôt, and I trust that Government will not let an old and faithful servant go unrewarded.

126. In the Oudh Circle there are four officers only having the permanent position of Sub-Assistant Conservators in charge of Divisions, one attached. These officers have heavy responsibilities for the pay and rank they receive. In other Departments the just principle is observed that increased responsiblities entitle the officers to increased emoluments.

127. Amongst the officers of the subordinate forest establishment, I have much pleasure in noticing the good services of Rangers Amanat-ullah Khan, Hussain Shah, and Kasim Khan respectively of the Gonda, Motipur, and Khairigarh ranges, and also of Forester Jagdeo Singh of Gorakhpur. Forest Apprentice Chiranji Lal, Officiating Ranger of Pilibhit, resigned the service to better his prospects. Ranger Lila Dhar has had to be dismissed.

The office establishment has done well. The work is still increasing, and I trust that in a new scheme of re-organizing both forest and office establishment there will be better inducements held out to men of long and faithful service than there is at present.

128. The year has been better as regards health than the one preceding, but some of the subordinate forest establishment have died from fever. Mr. Pinder has had to take sick leave to Europe. Gorakhpur has however been very unhealthy, and Mr. Campbell had an attack of cholera and many sharp attacks of fever, from which I am glad to say he is now free.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh,
Oudh Circle.

STATEMENTS.

ANNUAL FORM No. 49.—(Prescribed.)

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Area of Reserved Forests, 1881-82.

Division or range.	Civil district or territory.	Name of forest.	Area on 1st April, 1881.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March, 1882.		Number and date of notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
Pilibhit Division ...	Pilibhit district ...	Pilibhit Division	87,680	137	...	...	87,680	137		
Bhira Sub-Division.	Kheri ditto ...	Bhira Sub-Division	104,960	164	...	...	104,960	164		
Kheri (Trans Sarda),	Ditto ditto,	Niwalkhar Sub-Division ... / Khairigarh ditto ...	168,320	263	...	...	168,320	263		
Bahraich Division,	Bahraich ditto,	Motipur ditto ... / Bhinga ditto ...	164,480	257	...	...	164,480	257		
Gonda ditto ...	Gonda ditto ...	Gonda Division ...	91,520	143	6,738	...	98,258	154	Notification No. 669, of 15th Sept., 1881, Reve. (Forest) Dept	
Gorakhpur ditto ...	Gorakhpur ditto ...	Gorakhpur ditto ...	73,600	115	...	...	73,600	115		
		Total ...	690,560	1,079	6,738	...	697,298	1,090		

Area of unreserved forests.—Blank.

ANNUAL FORM No. 50.—(Prescribed.)

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Area of Plantations, 1881-82.

Division.	Name of plantation.	On 1st April, 1881.		Added during 1881-82.		On 31st March, 1882.		Remarks.
		Area.	Cost.	Area.	Cost.	Total Area.	Total Cost.	
		Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Bahraich ...	Nishangara	10	318	1	104	11	422	
	Kain	...	...	5	69	5	69	
	Dondra	...	...	2	5	2	5	
	Total ...	10	318	8	178	18	496	
Gorakhpur,	Ramgarh	493	6,745	60	1,097	553	7,842	Rs 360-6-0 Nursery.
	Sonari	60	254	80	154	140	408	Rs. 6-0-0 "
	Sokhai	...	...	80	246	80	246	
	Total ...	553	6,999	220	1,497	773	8,496	
Bahraich ...	Culturable operations	...	...	...	22*	...	22	* Out of Rs. 40 the sum of Rs. 17-6-8 are on account of Nishangara sissu and khair plantation charged to A.VIII*f.* in April, 1881, and admitted by Comptroller-General.
Kheri ...	Ditto ditto	...	...	...	412	...	412	
Bhira ...	Ditto ditto	...	...	...	27	...	27	
Gonda ...	Ditto ditto	...	...	...	6	...	6	
	Total ...	563	7,317	22	2,142	791	9,459	

Naini Tal:
The 25th July, 1882.

E. WOOD, Captain,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 51—(SUGGESTED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Area of forest tracts protected from fire during the dry season of 1882 (*to accompany report for* 1881-82).

Division.	Forest tracts.	Up to 15th June, 1881.		During dry season of 1882.					Year in which protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 15th June, 1882.		
		Acres	Rs. a. p.	Acres.	Acres.	Acres.	Rs. a. p.	Rs. a. p.		
Pilibhit ...	Mahofe home blocks	13,177	1,808 8 1	20,588	12,371	8,217	1,706 7 2	3,514 15 3	July, 1872.	
	Total	13,177	1,808 8 1	20,588	12,371	8,217	1,706 7 2	3,514 15 3		
Bhira Sub-Division,	Marha home block	15,712	2,199 3 11	15,712	9,427	6,285	1,595 9 2	3,794 13 1	January, 1877.	
	Total	15,712	2,199 3 11	15,712	9,427	6,285	1,595 9 2	3,794 13 1		
Kheri ...	Dudua home block	22,240	10,426 8 8	22,240	6,560	15,680	2,244 0 0	12,670 8 8	March, 1872.	
	Kusumbha home block	19,840	708 14 1	19,840	3,200	16,640	1,008 0 0	1,716 14 1	January, 1881.	
	Total	42,080	11,135 6 9	42,080	9,760	32,320	3,252 0 0	14,387 6 9		
Bahraich ...	Section II., Murtiha bambu block	640	1,998 6 8	640	...	640	658 5 9	2,656 12 5	February, 1878.	
	" " Angarghat block	1,280		1,280	...	1,280				
	" " Nishangara home block... ...	18,670		18,670	572	18,098				
	" V., Charda	4,960	7,627 7 8	4,960	...	4,960	756 5 7	8,383 13 3	March, 1875.	
	" " Dhauria	1,440		1,440	...	1,440				
	" VI., Kakardari	22		22	...	22				
	" " Asnaria	16		16	...	16				
	" " Lachmanpur	16		16	...	16				
	" VII., Block No. 1	1,186		1,186	...	1,186				
	" " " No. 2									
	" " " No. 3	2,040		2 040	480	1,560				
	Total	30,270	9,625 14 4	30,270	1,052	29,218	1,414 11 4	11,010 9 8		
Gorakhpur ...	Ramgarh and Tilkonia	6,754	5,776 14 7	6,754	...	6,754	1,197 3 11	6,974 2 6	June, 1875.	
	Nagwa	6,000		6,000	15	5,985				
	Sonari and Jugpur	22,132		22,132	...	22,132				
	Dudhai	8,600		8,600	20	8,580				
	Bhillampur and Banki	4,154		4,154	...	4,154				
	East Lehra	7,600		7,600	15	7,585				
	West Lehra	12,275		12,300	...	12,300				
	Bhari, Baise and Bhari Babun	5,000		6,000	...	6,000				
	Total	72,515	5,776 14 7	73,540	50	73,490	1,197 3 11	6,974 2 6		
	GRAND TOTAL ...	173,754	30,545 15 8	182,190	32,660	149,530	9,165 15 7	39,711 15 3		

	Rs. a. p.
Charged in previous years	26,877 1 11
" " 1881-82	8 564 6 10
" " 1882-83	4,270 6 6
Total ...	39,711 15 3

NAINI TAL :
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

ANNUAL FORM No. 52.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Prosecutions for breaches of Forest Rules during 1881-82.

Forest division and civil district.	Cases pending from 1880-81.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Pilibhit division	...	...	1	...	...	1	1	1	5	...	...	1	5	...
Pilibhit district														
Bhira sub-division	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kheri district														
Kheri division	...	...	7	...	...	7	7	5	7	1	1	6	8	1
Kheri district														
Bahramghat division	...	...	1	...	...	1	1	...	...	1	1	1	1	...
Bara Banki district														
Bahraich division	...	...	36	2	2	40	40	30	47	9	16	39	63	1
Bahraich district														
Gonda division	...	...	5	11	1	17	17	15	65	...	...	15	65	2
Gonda district														
Gorakhpur division	...	2	3	...	...	5	5	2	2	3	3	5	5	...
Gorakhpur district														
Total ...	...	2	54	12	3	71	71	53	126	14	21	67	147	4

NAINI TAL:
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Summary of revenue of the different divisions during 1881-82.

Budget heads receipts.	Direction.	Kheri Division.	Bhira Sub-Division.	Bahramghát Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhit Division.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government Agency :—									
(a) Timber	...	9,206 12 7	...	1,11,200 7 1	259 0 0	85 1 0	284 0 0	...	1,21,035 4 8
(b) Firewood and charcoal	...	...	...	14 8 0	843 13 6	...	144 4 0	...	1,002 9 6
(c) Bamboos	...	...	...	...	...	...	...	...	...
(d) Sandal-wood	...	...	...	...	...	...	...	...	...
(e) Grass and other minor produce	...	...	...	...	265 1 7	...	...	...	265 1 7
II.—Timber and other produce removed from the forests by consumers or purchasers :—									
(a) Timber	...	14,319 9 3	604 11 4	...	25,974 12 6	12,141 5 11	43,425 12 10	1,318 15 3	97,785 3 1
(b) Firewood and charcoal	...	268 4 0	220 1 9	...	478 3 3	1,217 15 0	9,806 0 4	4,916 9 9	16,907 2 1
(c) Bamboos	...	...	...	...	8 1 0	...	...	...	8 1 0
(d) Grazing and fodder grass	...	10,150 4 6	3,826 15 9	...	13,034 9 6	3,528 1 11	1,834 10 8	610 1 11	32,984 12 3
(e) Other minor produce	...	7,132 6 2	1,443 8 1	...	17,311 11 10	3,295 9 6	3,882 13 3	1,994 5 3	34,160 6 1
III.—Confiscated, drift and waif wood	...	1,100 1 3	47 2 0	...	1,625 0 0	572 5 4	...	869 11 6	4,314 4 1
IV.—Revenue from forests not managed by Government :—									
(a) Duty on foreign timber and other forest produce ...	...	...	...	...	...	...	...	...	...
(b) Revenue from shared and private forests	...	...	...	...	...	...	...	...	...
V.—Miscellaneous :—									
(a) Fines and forfeitures	...	12 8 0	53 15 0	...	16 0 0	36 8 0	...	...	118 15 0
(b) Refunds	...	25 0 0	102 15 6	...	15 12 4	...	...	...	143 11 10
(c) Other sources	5	380 2 7	109 2 5	591 9 9	505 2 11	240 9 2	524 1 0	69 1 0	2,419 13 3
Total receipts ...	5	42,695 0 4	6,408 7 10	1,11,806 8 10	60,337 4 5	21,117 7 10	59,901 10 1	8,878 12 8	3,11,145 4 5

CALCUTTA :
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Summary of expenditure of the different divisions during 1881-82.

Budget heads.	Direction.	Kheri Division.	Bhira Sub-Division.	Bahramghát Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhít Division.	Total.
A.—CONSERVANCY AND WORKS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency :—									
(a) Timber	...	51,806 2 9	...	16,823 6 2	131 0 0	...	50 4 2	...	68,810 13 1
(b) Firewood and charcoal	...	8 8 0	...	...	...	...	...	...	8 8 0
(c) Bamboos	...	...	...	...	...	...	...	...	...
(d) Sandal-wood	...	...	...	...	...	...	...	...	...
(e) Grass and other minor produce	...	...	...	...	49 12 7	...	...	...	49 12 7
II.—Timber and other produce removed from the forests by consumers or purchasers	...	1,360 14 0	1,646 15 3	...	1,999 3 8	354 5 0	255 1 6	3,066 11 3	8,683 2 8
III.—Confiscated, drift and waif wood	...	172 5 6	...	...	...	64 0 0	...	201 8 10	437 14 4
IV.—Revenue from forests not managed by Government :—									
(a) Duty on foreign timber and other forest produce ...	...	...	...	...	...	...	...	...	...
(b) Revenue from shared and private forests	...	...	...	...	...	...	...	...	...
V.—Rent of leased forests, and payments to shareholders in forests managed by Government	...	...	...	...	...	...	...	...	...
VI.—Live stock, stores, tools and plant ;—									
(a) Purchase of cattle	...	...	...	...	...	...	...	...	...
(b) Feed and keep of cattle	...	2,272 6 8	226 14 8	563 13 8	953 12 5	550 4 10	628 1 2	941 5 0	6,136 10 5
(c) Stores, tools and plant	29 0 0	118 14 0	286 7 8	1 15 3	11 8 0	...	129 12 0	332 9 0	910 1 11
VII.—Communications and buildings :—									
(a) Roads and bridges	...	5,475 4 2	785 0 11	...	2,928 0 8	518 2 0	505 4 5	1,583 14 6	11,795 10 8
(b) Buildings	...	8,937 1 11	1,607 11 6	199 13 4	4,493 14 7	2,294 11 8	1,996 9 0	1,761 5 7	21,291 3 7
(c) Other works	...	731 10 2	714 14 10	...	499 10 10	103 2 0	307 5 9	615 9 0	2,972 4 7
VIII.—Demarcation, improvement and extension of forests :—									
(a) Demarcation	...	80 0 4	346 0 6	...	3,112 12 4	4 10 0	...	354 8 0	3,897 15 2
(b) Compensation for land and rights	...	...	13 12 2	...	8 3 4	...	...	...	21 15 6
(c) Surveys and working-plans	...	...	...	...	8 14 0	...	...	72 11 3	81 9 3
(d) Plantations	...	412 3 8	27 4 3	...	200 6 2	5 10 0	1,497 6 5	...	2,142 14 6
(e) Protection from fire	...	3,403 4 10	1,220 6 8	...	1,773 2 3	136 10 6	1,233 10 5	1,515 9 10	9,282 12 6
(f) Other works	...	395 0 7	...	...	348 0 2	192 0 0	2,014 9 11	24 1 9	2,973 12 5
IX.—Miscellaneous :—									
(a) Refunds	...	157 10 8	...	...	25 0 0	...	...	...	182 10 8
(b) Law charges	...	...	32 0 0	...	...	...	...	1 0 0	33 0 0
(c) Other charges	...	605 1 11	118 12 10	...	110 11 1	...	9 3 3	190 8 0	1,034 5 1
Total, A.—Conservancy and Works	29 0 0	75,936 9 2	7,026 5 3	17,589 0 5	16,654 0 1	4,223 8 0	8,627 4 0	10,661 6 0	1,40,747 0 11

CALCUTTA:
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Summary of expenditure of the different divisions, during 1881-82.

Budget heads.	Direction.	Kheri Division.	Dhira Sub-Division.	Bahramghât Division.	Bahraich Division.	Gonda Division.	Gorakhpur Division.	Pilibhît Division.	Total.
B.—ESTABLISHMENTS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward, Total A.—Conservancy and works ...	29 0 0	75,936 9 2	7,026 5 3	17,589 0 5	16,654 0 1	4,223 8 0	8,627 4 0	10,661 6 0	1,40,747 0 11
I.—Salaries :—									
(a) Conservators	13,490 5 2	...	...	...	...	...	...	...	13,490 5 2
(b) Superior officers	...	8,200 0 0	8,722 9 3	2,400 0 0	4,610 3 5	2,400 0 0	2,950 0 0	...	29,282 12 8
(c) Subordinate forest and depôt establishments ...	...	5,217 8 8	1,334 6 8	330 11 4	2,858 6 8	1,560 6 7	4,290 6 5	597 13 11	16,219 12 3
(d) Office establishments	1,751 7 10	2,669 11 9	38 3 4	315 0 0	1,267 12 2	375 2 6	710 13 5	584 15 0	7,713 2 0
(e) Deputation and special allowances	...	...	...	...	...	...	...	...	...
II.—Travelling allowances :—									
(a) Conservators	1,358 10 0	...	...	...	...	...	...	...	1,358 10 0
(b) Superior officers	...	1,896 11 1	1,571 5 4	315 14 7	1,304 5 6	744 1 4	1,595 14 0	...	7,428 3 10
(c) Subordinate forest and depôt establishments ...	...	943 7 0	220 0 0	...	384 10 2	236 5 2	64 5 7	139 15 4	1,988 11 3
(d) Office establishments	360 8 7	709 10 8	9 7 0	...	294 9 5	118 15 2	250 10 3	155 4 0	1,899 1 1
III.—Contingencies :—									
(a) Stationery	3 13 6	31 3 3	15 12 6	7 8 0	10 10 0	8 4 6	4 2 0	18 12 6	100 2 3
(b) Carriage of tents and records	189 12 7	103 2 10	34 5 0	...	162 13 11	127 4 0	53 4 0	40 5 0	710 15 4
(c) Rents, rates and taxes	200 0 0	...	100 0 0	...	0 8 6	100 0 0	100 0 0	100 0 0	600 8 6
(d) Pay of police guards	...	276 15 9	...	179 8 3	119 0 0	114 2 8	51 0 4	145 8 9	886 3 9
(e) Official postage	160 11 6	45 14 6	15 9 6	66 12 0	57 14 0	21 12 6	20 9 6	17 13 6	407 1 0
(f) Sundries	318 5 2	548 6 10	10[illegible] 6 1	44 2 6	191 14 7	202 0 4	135 6 1	193 11 6	1,673 5 1
Total, B.—Establishments ...	17,833 10 4	20,642 12 4	12,171 0 8	3,659 8 8	11,292 12 4	6,008 6 9	10,226 7 7	1,924 3 6	83,758 14 2
GRAND TOTAL OF EXPENDITURE ...	17,862 10 4	96,579 5 6	19,197 5 11	21,248 9 1	27,946 12 5	10,231 14 9	18,853 11 7	12,585 9 6	2,24,505 15 1

CALCUTTA,
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 54.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Account current for the year 1881-82.

DR.

Heads of account.		Rs. a. p.	Rs. a. p.
To cash balance on 1st April, 1882		...	5,951 2 11
„ Revenue as per annual summary (Form No. 53)		...	3,11,145 4 5
„ Service Funds—			
Uncovenanted Service Family Pension Fund, Bengal ...		...	503 8 0
„ Deposits		...	100 0 0
„ Forest Cash Remittances, Local—			
Forest cheques drawn		2,34,022 7 4	
Inter-divisional transfers		14,965 9 1	
			2,48,988 0 5
„ Advances recoverable		...	2,40,133 7 5
„ Suspense		...	0 10 4
„ Account Current (other Governments)—			
Government of India		...	168 5 7
„ Inter-departmental transfers :—			
Public Works Department (other branches)		398 12 0	
Military Department—Bengal		5,000 0 0	
Civil Departments—Jails ...	Rs. 44 0 6		
Miscellaneous,	„ 11 0 2	55 0 8	
			5,453 12 8
Total		...	8,12,439 3 9

CR.

Heads of account.		Rs. a. p.	Rs. a. p.
By expenditure as per annual summary (Form No. 53) ...		...	2,24,505 15 1
„ Deposits		...	100 0 0
„ Forest Cash Remittances, Local—			
Remittances to treasuries		2,58,646 11 2	
Inter-divisional transfers		15,076 4 1	
			2,83,722 15 3
„ Advances recoverable		...	2,51,144 11 0
„ Suspense		...	0 0 4
„ Account current (other Governments)—			
Government of Bengal		...	642 0 0
„ Inter-departmental transfers :—			
Public Works Department (other branches)		40,655 2 7	
Military Department, Bengal		2,726 6 10	
Civil Department, Jails	Rs. 6,344 13 9		
Miscellaneous ...	„ 64 10 6		
Rewards for passing examinations ...	„ 360 0 0		
		6,769 8 3	
			50,151 1 8
„ Cash balance on 31st March, 1882		...	2,172 8 5
Total		...	8,12,439 3 9

CALCUTTA :
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 55.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Outstandings and liabilities on account of contractors and disbursers for 1881-82.

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings).	By Department (liabilities.)	
	Rs. a. p.	Rs. a. p.	Rs a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction	...	2,192 9 4	2,192 9 4	771 4 7	1,775 13 7	2,547 2 2	354 8 10	...	
Kheri	105 5 3	1,42,642 4 0	1,48,747 9 3	16,836 3 3	1,61,365 14 3	1,78 202 1 6	29,559 12 9	105 4 6	
Bhira	...	10,475 1 3	10,475 1 3	1,281 3 3	9 939 4 10	11,220 8 1	745 6 10	...	
Bahramghat	...	2,744 8 9	2,744 8 9	102 1 5	2,834 8 4	2,936 9 9	192 1 0	...	
Bahraich	...	39 923 11 9	39,923 11 9	3,341 6 11	38,216 6 4	41,557 13 3	1,634 1 6	...	
Gonda	...	8,536 10 7	8,536 10 7	993 13 6	8,335 10 10	9,399 8 4	792 13 9	...	
Gorakhpur...	...	9,421 4 5	9,421 4 5	844 15 6	9,909 13 11	10,754 13 5	1,333 9 0	...	
Pilibhit	...	18,197 5 4	18,197 5 4	864 14 6	18,767 2 11	19,632 1 5	1,434 12 1	...	
Total ...	105 5 3	2,40,138 7 5	2,40,238 12 8	25,035 14 11	2,51,144 11 0	2,76,180 9 11	36,047 1 9	105 4 6	

CALCUTTA:
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 56.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Revenue received and outstandings on account of revenue during 1881-82.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year.	REMARKS.
		Rs. a. p.	Rs. a. p.	Rs. a p.	Rs. a. p.	Rs. a. p	
Direction ...	Miscellaneous revenue other sources	...	0 0 5	0 0 5	0 0 5	...	
Kheri ...	Timber sales, grazing dues, and minor produce ...	5,563 13 8	43,069 8 9	48,633 6 5	42,695 0 4	5,938 6 1	Revenue received in advance, Rs. 2,949-11-6
Bhira ...	Grazing dues and minor produce	1,229 4 0	5,426 5 10	6,655 9 10	6,408 7 10	247 2 0	...
Bahramghat ...	Timber sales	2,247 14 6	1,11,368 2 10	1,13,616 1 4	1,11,806 8 10	1,809 8 6	Rs 200 received in advance.
Bahraich ...	Drift timber, grazing dues and minor produce ...	21,733 3 0	60,276 6 1	82,009 9 1	(a) 63,570 10 5	18,438 14 8	(a) Includes Rs. 3,253-6-0 written off under Local Government orders.
Gonda ...	Grazing dues, and minor produce	..	21,132 7 10	21,132 7 10	21,117 7 10	15 0 0	
Gorakhpur ...	Timber and other produce	1,658 5 0	60,947 0 3	62,605 5 3	59,901 10 1	2,703 11 2	Rs. 3,986 received in advance.
Pilibhit ...	Ditto ditto	2,563 15 9	8,878 12 8	11,442 12 5	8,878 12 8	2,563 15 9	...
	Total ...	34,996 7 11	3,11,098 12 8	3,46,095 4 7	(b)3,14,378 10 5	31,716 10 2	

REMARKS.

	Rs. a. p.
From Public Departments...	1,809 8 6
„ other purchasers ...	29,907 1 8
Total ...	31,716 10 2

CALCUTTA:
The 14th June, 1882.

(b). Realizations as per Form No. 53 ... 3,11,145 4 5
Written off under Government Orders, 3,233 6 0
Total ... 3,14,378 10 5

A. L. HOME,
Asst. Comptroller-General (Forests).

FORM No. 57—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Financial results of the year 1881-82.

Division.	*Timber and other produce removed from the forests by Government Agency.*		*Other revenue.*		*Formation, protection and improvement of forests.*	*Total.*		Remarks.
	Receipts	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Pilibhit	...	...	8,879	7,936	6,634	8,879	14,570	
Bhira Sub ...	...	...	6,409	10,611	10,571	6,409	21,182	
Kheri	9,207	66,118	33,488	15,837	18,594	1,54,502	1,23,782	
Bahramghat ...	1,11,807	23,233						
Bahraich... ...	1,368	181	58,969	14,141	17,594	60,337	31,916	
Gonda	85	...	21,032	6,148	6,069	21,117	12,217	
Gorakhpur ...	484	50	59,417	8,149	12,640	59,901	20,839	
Total ...	1,22,951	89,582	1,88,194	62,822	72,102	3,11,145	2,24,506	

NAINI TAL :
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 58.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Trees felled by Government Agency during the year 1881-82. (*Selection fellings.*)

Division.	*Trees felled.*		Remarks.
	Description.	Number.	
Kheri (Trans-Sarda)...	Sál	2,528	
	Sissu	531	
	Asaina	101	
	Total ...	3,160	

Abstract of the Circle.

Description of trees.	1st class above 6′ in girth.	2nd class 6′—4½′ in girth.	3rd class 4½′—3′ in girth.	4th class 3′—1½′ in girth.	5th class under 1½′ in girth.	Total of each kind of trees.	Remarks.
Sál	2,528	...	...	...	...	2,528	
Sissu	531	...	...	...	...	531	
Asaina	101	...	...	...	...	101	
Total ...	3,160	...	...	...	...	3,160	

NAINI TAL :
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDIX TO FORM No. 58.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Summary of Receipts and Expenditure on Departmental thinnings during the year 1881-82.

Division.	Descriptions of Timber.	On hand at commencement of the year.		Cut during the year.		TOTAL.		Expenditure on years cutting and thinnings.		Sold during the year.		On hand at close of the year.		REMARKS.
		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Amount.	Number.	Value.	Number.	Value.	
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	
Gorakhpur.	Sal Ballas ...	...	...	7,989	4,839 8 4	7,989	4,839 8 4	7,989		7,989	4,839 8 4	...	...	
	Sal Koros ...	...	...	5,558	833 6 10	5,558	833 6 10	5,558		5,558	833 6 10	...	...	
	Asna Ballas ...	...	...	4,911	1,403 8 0	4,911	1,403 8 0	4,911	1,301 15 9	4,911	1,403 8 0	...	...	
	Mahua trees ...	...	...	78	183 9 0	78	183 9 0	78		78	183 9 0	...	...	
	Firewood ...	...	...	Mds. 54,000	5,655 14 4	54,000	5,655 14 4	54,000		54,000	5,655 14 4	...	...	
	Total ...	...	...	18,536	12,915 14 6	18,536	12,915 14 6	18,536	1,301 15 9	18,536	12,915 14 6	...	...	
		...	Maunds.	54,000	...	54,000	...	54,000	...	54,000	...	...	...	

NAINI TAL:
The 30th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 59—(SUGGESTED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Cutturn of timber and other produce cut and collected by Government Agency during the year 1881-82.

Division.	Produce cut and collected. How obtained.	Description.	Number or quantity.	Cubic feet.	REMARKS.
Kheri Division,	Selection fellings,	Sal logs	3,780	156,320	
	Line cuttings ...	Ditto	46		
	Dead standing ...	Ditto	81		
	River ...	Ditto	1		
	Selection fellings,	Sissu logs	531	13,304	
	Ditto ditto ...	Asna logs	130	7,392	
	River ...	Ditto	4		
	Selection fellings, Line cuttings ... Dead standings ...	Sal sleepers ...	6,265	6,439	
	Hollow trees ...	Canoes	159	...	
	River ...	Ditto	17	...	
	Collections ...	Drift timber ...	645	...	
		Total ...	11,659	183,455	
Bhira Sub Division.	Collections ...	Drift timber ...	1	..	
Pilibhit Division,	Ditto ...	Drift timber ..	140	...	
Bahraich "	Ditto ...	Mahua flowers ...	1,311	Maunds.	
	Fellings ...	Miscellaneous poles ...	168	...	
Gonda "	Fellings ...	Dhao axles... ...	97	...	
	Collections ...	Drift timber ...	661	...	
		Total ...	758	...	
Gorakhpur "	Old stock ...	Boats	15	...	
	Tops and stumps,	Charcoal	1,010	Maunds	
		Total ...	12,741 2,321	183,455 Maunds.	
		Abstract of the circle.			
		Sal logs	3,908	156,320	
		Sissu logs	531	13,304	
		Asna logs	134	7,392	
		Sal sleepers ...	6,265	6,439	
		Dhao axles... ...	97	...	
		Canoes or boats ...	191	...	
		Miscellaneous poles ...	168	Maunds.	
		Charcoal	1,010	...	
		Mahua flowers ...	1,311	...	
		Drift timber ...	1,447	...	
		Total ...	12,741 2,321	183,455 Maunds.	

FORM No. 60—(SUGGESTED).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, OUDH CIRCLE.

Timber and other produce received from forests in sale depôts during the year 1881-82.

Division.	Depôt.	Produce received. Description.	Number or quantity	Cubic feet.	Remarks.
Bahramghat ...	Bahramghat ...	Sal logs ...	2,775	145,773	
		Sal pieces ...	8	237	
		Asna logs ...	49	2,712	
		Miscellaneous ...	168	...	
		Charcoal ...	210 Mds.	...	
		Total Timber ...	3,000	148,722	
		Total maunds ...	210	...	
		Abstract of the Circle.			
		Sal	2,788	146,010	
		Asna	49	2,712	
		Miscellaneous poles,	168	...	
		Total timber ...	3,000	148,722	
		Charcoal maunds ...	210	...	

NAINI TAL:
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 61—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Sales of timber and other produce cut and collected by Government Agency during the year 1881-82.

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	REMARKS.
	PART I.—SOLD FROM DEPOT.				
Bahramghât ...	Bahramghât Depôt,	Sal logs ...	913	42,548	
		Asna logs ...	257	14,972	
		Sal scantlings ...	101,515	44,243	
		Asna scantlings ...	8,487	4,009	
		Deodar ditto ...	18	5	
		Sal pieces of logs,	615	9,656	
		Asna ditto ...	94	874	
		Sal off-cuts, mds. ...	1,192	...	
		Asna ditto ...	128	...	
		Ditto ditto ...	169	152	
		Miscellaneous poles,	249	...	
		Mango fuel, mds. ...	70	...	
		Canoe	1	...	
		Total ...	112,318 Mds. 1,390	116,459 ...	
	Lucknow Depôt ...	Sal scantlings ...	...	4,702	
		Sal off-cuts, mds. ...	3,447	...	
		Asna ditto ...	693	...	
		Miscellaneous poles,	43	...	
		Total ...	43 Mds. 4,140	4,702 ...	
		GRAND TOTAL ...	112,361 Mds. 5,530	121,161 ...	
Bahraich ...	Dharmapur Depôt,	Canoes ...	7	...	
		Total ...	7	...	
		GRAND TOTAL ...	112,368 Mds. 5,530	121,161 ...	
	PART II.—SOLD LOCALLY.				
Kheri ...	Sathiana ...	Sal logs ...	94	4,186	
	Dudua ...	Ditto ...	2	162	
		Asna logs ...	9	563	
	Suthiana and Dudua,	Sal scantlings ...	370	2,174	
	Ramnagar ...	Sal logs ...	3	...	
		Asna logs ...	3	...	
		Canoes ...	2	...	
	River Sarda ...	Drift timber ...	645	...	
		Total ...	1,128	7,085	
Bhira Sub-Division,	River Sarda ...	Drift timber ...	1	...	
Pilibhit ...	Ditto ...	Ditto ...	133	...	
	Bareilly ...	Ditto ...	7	...	
		Total ...	140	...	
Bahraich ...	Sujouli ...	Firewood, mds. ...	8 037	...	
	Abdullaganj ...	Mahua flowers ...	1,285	...	
	Motipur ...	Ditto ...	26	...	
		Total mds. ...	9,348	...	

FORM No. 61—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Sales of timber and other produce cut and collected by Government Agency during the year 1881-82.—(concluded).

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	REMARKS.
Gonda ...	Nawábganj ...	Dhao axles ...	97	...	
	Gonda ...	Confiscated and drift wood.	661	...	
		Total ...	758	...	
Gorakhpur ...	Birdghat ...	Canoes ...	3	...	
	Sakhui ...	Sal poles ...	16	...	
	Ditto ...	Charcoal, Mds. ...	1,010	...	
		Total ...	19 Mds. 1,010	... ...	
		GRAND TOTAL OF "SOLD LOCALLY."	2,046 Mds. 10,358	7,085 ...	
		GRAND TOTAL OF ALL.	112,967 Mds. 15,888	128,246 ...	
		Abstract of the Circle.			
		PART I.—SOLD FROM DEPÔT.			
		Sal logs and pieces,	1,528	52,204	
		Asna logs and do.,	351	15,846	
		Sal scantlings ...	101,515	48,945	
		Asna ditto ...	8,487	4,009	
		Deodar ditto ...	18	5	
		Asna off-cuts ...	169	152	
		Sal off-cuts, Mds. ...	4,639	...	
		Asna ditto ...	821	...	
		Miscellaneous poles,	292	...	
		Canoes ...	8	...	
		Mango fuel, Mds ...	70	...	
		Total ...	112,368 Mds. 5,530	121,161 ...	
		PART II.—SOLD LOCALLY.			
		Sal logs ...	99	4,348	
		Asna logs ...	12	563	
		Sal scantlings ...	370	2,174	
		Sal poles ...	16	...	
		Dhao axles ...	97	...	
		Canoes ...	5	...	
		Drift wood ...	1,447	...	
		Total ...	2,046	7,085	
		Firewood, Mds. ...	Mds. 8,037	...	
		Charcoal " ...	" 1,010	...	
		Mahua flowers ...	" 1,311	...	
		Total ...	Mds. 10,358	...	
		Total ...	2,046 Mds. 10,358	7,085 ...	
		GRAND TOTAL OF ALL.	114,414 Mds. 15,888	128,246 ...	

NAINI TAL:
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1881-82.

Particulars.			No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
SALE DEPÔTS.						
Balance at commencement of the year.						
Bahramghat Division.	Bahramghat Depôt.	Sal logs ...	513	24,406		
		Asna logs ...	419	22,512		
		Deodar logs ...	1	74		
		Sal scantlings ...	188,064 and 4 stacks.	10,101		
		Sal pieces of logs ...	41	891		
		Miscellaneous poles,	563	...		
		Canoes	5	...		
		Large boats ...	54	...		
	Lucknow Depôt.	Sal scantlings ...	128	148	189,788 and 4 stacks.	58,132
Bahraich Division.	Dharmapur Depôt.	Canoes ...	472	...	472	
Locally.						
Bahraich Division.		... Firewood Mds. ...	8,037	...	8,037	
Kheri Division ...		Sal logs ...	3,268	148,570		
		Ditto ...	2,756	110,240		
		Ditto ...	5,374	214,960		
		Ditto (in transit)...	239	9,560		
		Asna logs ...	280	8,520		
		Ditto ...	138	5,520		
		Ditto ...	325	13,000		
		Ditto (in transit),	4	160		
		Sal Kurries ...	249	343		
		Charcoal, Mds. ...	547	...		
		Firewood ...	166	...		
		Large boats ...	36	...		
		Canoes ...	517	...	13,186 Mds. 713	510,873
Gorakhpur Division ...		Sal Ballas ...	1,515	...		
		Sal Koros ...	19	...		
		Sal Golas ...	134	...	1,668	...
		Total ...	...	...	205,114 and 4 stacks and 8,750	569,005 Maunds.

Particulars.		No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Received from the forest in Sale Depôt.					
Sal logs ...		2,775	145,773		
Sal pieces of logs ...		8	237		
Asna logs ...		49	2,712		
Miscellaneous poles,		168	...		
Charcoal, Mds. ...		210	...	3,000 Mds. 210	148,722
Received from the forests and sold locally.					
Dhao axles ...		97	...		
Mahua flowers ...		1,311	Maunds		
Charcoal ...		1,010	...		
Confiscated and drift timber.		1,447	...	1 544 Mds. 2,321	
Received from the forests in Depôts other than Sale Depots.					
Sal logs ...	Selection fellings ... 3,780	3,968	156,320		
	Line cutting ... 46				
	Dead standings ... 81				
	River 1				
Asna logs ...	Fellings 130	134	7,392		
	River 4				
Sissu logs ...	Fellings	531	13,304		
Canoes ...	From Forest ... 159	176	...		
	„ River ... 17				
	„ In transit ... 12	12	...		
Boats ...	In Gorakhpur	15	...	4,776	177,016
Received by conversions.					
Sal sleepers		6,265	6,439		
Sal scantlings		490	3,112		
Ditto		97,313	61,393		
Asna scantlings		10,004	5,674		
Deodar ditto		42	38		
Sal piecess of logs		574	8,76		
Asna ditto		94	874		
Asna log (transfer from Sal to Asna) ...		1	48		
Sal offcuts		Mds. 4,639	...		
Asna offcuts		821	...		
Ditto		169	152		
Mango fuel		Mds. 70	...	114,952 Mds. 5,530	86,495

FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the year 1881-82—(concluded.)

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Received by transfer from Sale Depôt.				
Sal scantlings	...	4,702		
Sal offcuts	3,447	...		
Asna offcuts	693	...		
Miscellaneous poles	43	...		
Large boats	19	...		
Canoes	12	...	74	4,702
			Mds. 4,140	
Received by transfer from Forest Division.				
Canoes	8	...	3	...
Total Receipts ...	...	...	124,349 Mds. 12,201	416,935
GRAND TOTAL ...	...	...	329,463 and 4 stacks and 20,951	985,940 Maunds.
Removed by purchasers from Sale Depôts.				
Sal logs	913	42,548		
Asna logs	257	14,972		
Sal scantlings	101,515	44,243		
Ditto	...	4,702		
Asna scantlings	8,487	4,009		
Deodar scantlings	18	5		
Sal pieces of logs	615	9,656		
Asna ditto	94	874		
Sal offcuts	Mds. 1,192	...		
Ditto	3,447	...		
Asna offcuts	128	...		
Ditto	693	...		
Ditto	169	152		
Miscellaneous poles	149	...		
Ditto	43	...		
Mango fuel	Mds. 70	...		

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Used by the Department.				
Sal logs	104	5,446		
Asna log	1	48		
Sal scantlings	21	452		
Ditto	16,121 and 2 stacks	2,549		
Asna scantlings	49	48		
Sal Kurries	49	41		
Miscellaneous Poles	193	...		
Charcoal mds.	4	...	16,538 and 2 stacks Mds. 4	8,584
Transferred to Sale Depôts.				
Sal scantlings	...	4,702		
Sal offcuts	3,447	...		
Asna offcuts	693	...		
Miscellaneous Poles	43	...	43 Mds. 4,140	4,702
Large boats	19	...		
Canoes	12	...		
Ditto	3	...	34	
Sal logs ... These have been sent to Bahramghat from Kheri and entered as received from the Forest in Sale Depôt.	2,775	145,773		
Sal pieces of logs,	8	237		
Asna logs ...	49	2,712		
Charcoal ...	Mds. 210	...	2,832 Mds. 210	148,722
Total ...	...	...	146,005 and 2 stacks. Mds. 20,679	423,499
Balance at close of the year.				
SALE DEPÔT.				
Bahramghat Division. Sal logs	771	41,832		
Asna logs	16	778		
Sal scantlings	159,513 and 2 stacks.	11,298		

Canoes	8	...	112,368 Mds. 5,530	121,161
Removed by purchasers from Forest Depôts other than Sale Depôts.				
Sal logs	99	4,348		
Asna logs	12	563		
Sal scantlings	370	2,174		
Sal Ballas	16	...		
Canoes	5	...		
Firewood	Mds. 8,037	...	502 Mds. 8,037	7,085
Sold from Forests "locally."				
Dhao wood axles	97	...		
Mahua flowers...	Mds. 1,311	...		
Charcoal	1,010	...		
Confiscated and drift timber	1,447	...	1,544 Mds. 2,321	
Converted in Depôts.				
Sal logs (in Sale Depôt)	1,604	85,799		
Asna logs	195	9,474		
Deodar logs	1	74		
Sal scantlings	8,228	8,707		
Asna scantlings	1,412	1,226		
Sal pieces of logs	8	237		
Sal logs (in Forest Depôts)	692	27,680		
Sal log (transferred from Sal to Asna) ...	1	48	12,141	133,245
Lost or written off as useless.				
Charcoal	337	...		
Firewood	100	...		
Large boats	2	...		
Canoes	1	...	3 Mds. 437	

Lucknow Depôt ...	Asna scantlings ...	56	391			
	Deodar scantlings ...	24	33			
	Miscellaneous Poles ...	246	...			
	Charcoal	206	...			
	Large boats	35	...			
	Canoes	4	...			
	Sal scantlings	128	148	160,793 and 2 stacks. Mds. 206	54,475	
Bahraich Division. Dharmapur Depôt.	Canoes	465	...	465	...	
Kheri Division ...	*Locally.*					
	Sal logs	11,866	456,118			
	Asna logs	820	31,317			
	Sissu logs	531	13,304			
	Sal sleepers	6,265	6,439			
	Sal scantlings	99	486			
	Sal kurries	200	302			
	Firewood, Mds	66	...			
	Large boats	53	...			
	Canoes	699	...	20,533 Mds. 66	507,966	
Pilibhit Division ...	Canoes	3	..	3	...	
Gorakhpur Division.	Sal Ballas	1,499	...			
	Sal Koros	19	...			
	Sal Golas	134	...			
	Boats	12	...	1,664	...	
Total balance ...		...	...	183,458 and 2 stacks Mds. 272	562,441	
GRAND TOTAL ...		...	...	329,463 and 4 stacks Mds. 20,951	985,940	

DATED NAINI TAL:
The 25th, July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 63.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82.

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	REMARKS.
			Rs. a. p.	Rs. a. p.	
Pilibhit ...	Sál timber, ridge-poles, &c. ...	579	545 15 0	545 15 0	
	Miscellaneous wood ...	221	244 0 0	244 0 0	
	Fees from carpenters ...	275	283 0 0	283 0 0	
	Royalty on carts	355	217 0 0	217 0 0	
	Ditto on beds, stools ...	375	29 0 3	29 0 3	
	Total timber ...	1,802	1,318 15 3	1,318 15 3	
	Firewood 25,417 loads about ...	Mds. 55,814	2,880 14 3	2,880 14 3	
	Charcoal 2,292 " " ...	" 8,340	1,105 11 6	1,105 11 6	
	Fees from charcoal makers ...	" 6,080	930 0 0	930 0 0	
	Total, firewood and charcoal ...	Mds. 70,234	4,916 9 9	4,916 9 9	
	Grazing cattle	3,983	369 10 6	369 10 6	
	Ditto ditto passing through forests.	1,598	240 7 5	240 7 5	
	Total grazing ...	5,581	610 1 11	610 1 11	
	Grasses	...	234 11 0	234 11 0	
	Hides and horns	...	67 6 6	67 6 6	
	Minor produce	...	507 10 9	507 10 9	
	Sál bark	...	176 1 0	176 1 0	
	Dues on tanners and others ...	...	108 8 0	108 8 0	
	Total minor produce ...	...	1,094 5 3	1,094 5 3	
	Total Revenue under II. ...	...	7,940 0 2	7,940 0 2	
Bhira Sub ...	Kusum sugar mill crusher ...	412	283 4 0	283 4 0	
	Amaltás ditto ditto ...	122	45 12 0	45 12 0	
	Bel ditto ditto ...	210	65 10 0	65 10 0	
	Banyan ditto ditto ...	1	1 8 0	1 8 0	
	Jamun ditto ditto ...	1	2 0 0	2 0 0	
	Sál ditto ditto ...	1	2 8 0	2 8 0	
	Miscellaneous timber cart and head loads.	186	74 10 0	74 10 0	
	Sál wheel naves	77	22 13 0	22 13 0	
	Dry sál poles	321	106 10 4	106 10 4	
	Total timber ...	1,331	604 11 4	604 11 4	
	Firewood 3,860 loads estimated about.	Mds. 22,297	220 1 9	220 1 9	
	Total firewood ...	Mds. 22,297	220 1 9	220 1 9	
	Grazing cattle for 1880-81 ...	4,514	...	1,207 5 0	
	Ditto ditto 1881-82 ...	4,360	500 12 3	500 12 3	
	Ditto 3 mile villages ...	12,322	1,753 1 0	1,595 11 0	
	Ditto outside ditto ...	3,191	543 5 0	453 9 0	
	Ditto Elephants ...	16	48 0 0	48 0 0	
	Ditto on cattle passing through forests.	665	21 10 6	21 10 6	
	Total grazing ...	25,068	2,866 12 9	3,826 15 9	
	Minor produce contract ...	...	1,043 0 0	1,043 0 0	
	Grasses	...	106 8 3	106 8 3	
	Horns	...	2 2 0	2 2 0	
	Canes	...	1 9 9	1 9 9	
	Mahua	...	138 0 6	138 0 6	
	Wild fruits	...	5 0 0	5 0 0	
	Wax and honey	...	34 15 1	34 15 1	
	Minor produce	...	25 10 6	25 10 6	
	Baib grass	...	86 10 0	86 10 0	
	Total minor produce ...	...	1,443 8 1	1,443 8 1	
	Total Revenue under II. ...	...	5,435 1 11	6,095 4 11	

FORM No. 63.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, QUDH CIRCLE.

Timber and other produce out, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82—(continued.)

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	Remarks.
			Rs. a. p.	Rs. a. p.	
Kheri ...	Sál timber	c. ft. 27,966	6,764 14 7	6,764 10 0	
	Asna do.	„ 894	46 14 0	46 14 0	
	Kusum do.	„ 225	112 7 5	112 7 5	
	Jamun do.	„ 41	2 9 0	2 9 0	
	Sissu do.	„ 101	29 4 10	29 4 10	
	Sissu do.	„ 18,889	9,444 7 2	...	Credit given in 1880-81.
	Total ...	c. ft. 48,116	16,400 9 0	6,955 13 3	
	Sál timber	708	4,132 14 0	4,132 14 0	
	„ rafters	101	65 12 0	65 12 0	
	Miscellaneous timber ...	2,582	733 2 0	733 2 0	
	Revenue on account dry timber in part payment.	...	2,432 0 0	2,432 0 0	
		3 391	7,363 12 0	7,363 12 0	
	Total timber ...	...	23,764 5 0	14,319 9 3	
	Firewood 652 cartloads about ...	Mds. 6 520	163 4 0	163 4 0	
	Charcoal 105 do. do. ...	1,050	105 0 0	105 0 0	
	Total firewood and charcoal...	7,570	268 4 0	268 4 0	
	Grazing cattle	109,843	10,932 9 0	10,051 10 6	
	Ditto ponees	19	2 4 0	2 4 0	
	Ditto sheeps and goats ...	3,501	96 6 0	96 6 0	
	Total grazing ...	113,363	11,031 3 0	10,150 4 6	
	Minor preduce	...	7,132 6 2	7,132 6 2	
	Total Revenue under II. ...	...	42,196 2 2	31,870 7 11	
Bahraich ...	Dry Sál timber	c. ft. 30,378	8,446 7 0		
	Green sál do.	„ 8,999	5,586 11 4		
	Asidh do.	„ 230	33 2 0		
	Jaman do.	„ 9,761	547 9 10		
	Asna do.	„ 999	187 5 8		
	Tikoe do.	„ 1.654	103 6 2		
	Total ...	c. ft. 52,021	14,904 10 0		
	Sál timber	60,314	16,404 1 6	25,974 12 6	
	Asna do.	274	1,104 8 0		
	Dhao do.	4	3 0 0		
	Jaman do.	402	408 4 0		
	Miscellaneous timber ...	4,082	432 2 10		
	Cart wheels, &c.	535	165 4 0		
	Axles and other furniture ...	193	43 13 6		
	Kasum wood crushers ...	...	1,592 0 0		
		65,804	20,181 1 10		
	Total timber ...	...	35,085 11 10	25,974 12 6	
	Firewood, 1,888 loads of carts, &c. about	Mds. 18,344	208 15 0	208 15 0	
	Charcoal, 453 do. do. ...	„ 2,559	269 4 3	269 4 3	
	Total firewood and charcoal ...	Mds. 20,903	478 3 3	478 3 3	
	Bamboos	125	8 1 0	8 1 0	
	Grazing of cattle	...	14,086 1 9	13,034 9 6	
	Grass	...	61 0 0		
	Canes	...	22 2 0		
	Skins	...	5 0 0		
	Mahua flowers	...	73 12 10	17,311 11 10	
	Kankar	...	4 0 0		
	Leaves	...	0 6 0		
	Catechu posts	...	13,912 7 0		
	Contract for minor produce ...	...	6,162 0 0		
	Total minor produce ...	...	20,240 11 10	17,311 11 10	
	Total Revenue under II. ...	...	69,898 13 8	56,807 6 1	

FORM No. 63.—(Suggested.)

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82—(concluded.)

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue. Rs. a. p.	Amount actually realized during the year. Rs. a. p.	Remarks.
Gonda ...	Sál timber	6,783	4,794 6 4	5,025 12 6	
	Sissu logs	8	25 6 2	18 3 2	
	Cart wheels	750	988 0 0	807 0 0	
	Asna timber	1,008	888 13 0	685 6 10	
	Khair timber	10	13 8 0	13 8 0	
	Tikoe do.	59	77 6 2	33 7 5	
	Mahua do.	4	8 8 0	8 8 0	
	Jamun do.	222	283 11 7	156 11 6	
	Nim do.	1	1 0 0	1 0 0	
	Unreserved wood	49,500	3,731 12 6	3,231 12 6	
	Contract for making carts ...	317	3,669 0 0	2,160 0 0	
	Total timber ...	58,662	14,481 7 9	12,141 5 11	
	Firewood, 8,440 loads ...	Mds. 16,876	547 3 0	547 3 0	
	Charcoal 697 do. ...	" 1,685	670 12 0	670 12 0	
	Total firewood and charcoal ...	18,561	1,217 15 0	1,217 15 0	
	Grazing cattle	422	61 8 0	61 8 0	
	Ditto sheep	95	2 15 6	2 15 6	
	Ditto contract about ...	18,473	3,463 10 5	3,463 10 5	
	Total grazing ...	18,990	3,528 1 11	3,528 1 11	
	Grass	...	465 10 3	465 10 3	
	Lime	...	131 15 0	131 15 0	
	Mahua flowers	...	147 12 0	147 12 0	
	Sirki (reeds)	...	5 9 0	5 9 0	
	Minor produce	...	184 7 3	184 7 3	
	Contract for hides	...	93 0 0	83 0 0	
	Ditto for skins	...	57 0 0	57 0 0	
	Ditto for honey	...	63 0 0	63 0 0	
	Ditto for rohin	...	45 0 0	40 0 0	
	Catechu making	...	2,424 4 0	2,117 4 0	
	Total minor produce ...	...	3,617 9 6	3,295 9 6	
	Total Revenue under II. ...	...	22,845 2 2	20,183 0 4	
Gorakhpur ...	Sál timber	41,761	2,6988 14 9	26,824 8 6	
	Asna do.	5,489	10,996 0 10	10,306 0 10	
	Jamun do.	733	631 14 0	586 14 0	
	Mahua trees	252	747 7 0	747 7 0	
	Asidh trees	35	23 8 0	23 8 0	
	Miscellaneous trees	3,457	733 8 0	733 8 0	
	Sirsa trees	1	5 0 0	5 0 0	
	Kuham	372	156 12 6	156 12 6	
	Total timber ...	101,200	40,283 1 1	39,383 10 10	
	Firewood, 8,000 carts about ...	Mds. 48,000	5,293 12 0	5,263 12 0	
	Ditto 1,091 men ...	" 17,000	681 5 4	656 3 4	
	Ditto by contract ...	" 30,000	3,684 0 0	3,684 0 0	
	Charcoal, 47 men	" 1,250	168 6 0	168 6 0	
	Total firewood and charcoal ...	Mds. 96,250	9,827 7 4	9,772 5 4	
	Grazing cows	8,446	753 15 4	735 14 9	
	Ditto buffaloes	2,789	807 9 2	787 9 2	
	Ditto by contract about ...	1,100	275 0 0	275 0 0	
	Total grazing ...	12,335	1,836 8 6	1,798 7 11	
	Grass	...	3,617 5 9	3,580 12 3	
	Wild fruits	...	33 2 0	28 2 0	
	Hides	...	188 0 0	188 0 0	
	Canes	...	5 0 0	5 0 0	
	Mahua flowers	...	42 0 0	42 0 0	
	Leaves	...	5 6 0	5 6 0	
	Total minor produce ...	..	3,890 13 9	3,854 4 3	
	Total Revenue under II. ...	...	55,837 14 8	54,808 12 4	
	Advance in part payment on account of timber and other items.	...	4,140 8 9	4,140 8 p	
	Total Revenue under II. ...	...	59,978 7 5	58,949 5 1	
	Total Revenue of Circle under II.	...	2,08,292 14 6	1,81,845 8 6	

Naini Tal :
The 27th July, 1880.

E. WOOD, Captain,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDIX TO FORM No. 63.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Statement showing the amount realized on account of different classes of timber and other produce sold during the year 1881-82, *under Budget head I.*

Division.	Description.	Number or quantity sold.	Cubic feet.	Amount realized and due on account of sales. Rs. a. p.	Remarks.
Bahramghát.	Sál logs	913	42,547 70	28,940 10 11	
	Asna „	257	14,972·53	6,607 2 0	
	Sál scantlings ...	101,515	44,242·75	66,636 4 8	
	Asna „ ...	8,487	4,008·85	4,122 7 7	
	Deodar „ ...	18	4·66	9 5 1	
	Pieces of sál logs ...	615	9656·28	5,811 2 11	
	Pieces of asna logs ...	94	874·40	288 13 4	
	Miscellaneous poles ...	249	...	118 14 4	
		Mds. s. c.			
	Sál off-cuts ...	1,191 17 8	...	325 15 5	
	Asna off-cuts ...	128	...	78 2 0	
	Ditto ditto ...	169	182·05		
	Canoe	1	...	25 0 0	
	Mango fuel ...	Mds. 70	...	14 8 0	
	Sal scantlings ...		4701·60	1,414 4 2	
	Sál off-cuts ...	3,447 17 0	...	1,172 1 3	
	Asna off-cuts ...	692·23	...	231 13 5	
	Miscellaneous poles ...	43	...	30 0 0	
	Total ...	No. 112,361 Mds. 552,917¼	121,140·82	*1,15,776 9 1	
Kheri ...	Sál logs	99	4,347·70	2,453 5 3	
	Asna logs	12	563·25	170 13 0	
	Sál scantlings ...	370	2173 55	6,520 10 4	
	Old boats	2	...	62 0 0	
	Total ...	483	7084·50	9,206 12 7	
Bahraich ...	Canoes	7	...	259 0 0	
	Firewood	Mds. 8,036·26	...	843 13 6	
	Mahua flowers ...	„ 1,311·20	...	265 1 7	
	Total ...	No. 7 Mds. 9,348 6	...	1,367 15 1	
Gonda ...	Dhao axles... ...	97	...	85 1 0	
	Total ...	97	...	85 1 0	
Gorakhpur...	Sal ballas (poles) ...	16	...	8 0 0	
	Boats or canoes ...	3	...	276 0 0	
	Charcoal	Mds. 10,09¾	...	144 4 0	
	Total ...	No. 19 Mds. 10,09¾	...	428 4 0	
	GRAND TOTAL ...	No. 112,967 Mds. 15,877 13¼	128,225·82	1,26,864 9 9	

	Rs. a. p.
Deduct amount due but not realized during the year	1,809 8 6
Balance	1,25,055 1 3
Deduct Rs. 5,000 written back for 1877	5,000 0 0
Balance	1,20,055 1 3
Add amounts realized on account previous years	2,247 14 6
Total shown as revenue on account sales under Budget head I. ...	1,22,302 15 9

	Rs. a. p.
	*1,15,776 9 1
Outstanding	1,809 8 6
	=1,13,967 0 7
+Former years	2,247 14 6
	=1,16,214 15 1
	5,000 0 0
Minus 5,000	=1,11,214 15 1

NAINI TAL:
The 27th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 64—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1881-82.

Name of Department.	Particulars of supplies.	Amount supplied.	Rate. At	Rate. Per	Amount of revenue. Due.	Amount of revenue. Received.	Amount of revenue. Total Outstanding.	Cost of Forest Department. Timber expenses under A.I.	Cost of Forest Department. Quota of all other expenses chargeable against timber, &c.	Cost of Forest Department. Total.	Comparison of revenue and expenditure. Surplus.	Comparison of revenue and expenditure. Deficit.
			Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
BAHRAMGHAT DIVISION.												
Public Works Department...	Sal scantlings	9,591·74	2 6 9½	Cubic feet.	23,270 10 7	22,840 10 2	430 0 5					
Ditto ditto ...	Asna ditto	1,478·31	1 7 6	...	2,169 13 0	1,561 10 10	608 2 2					
Jail Department ...	Sal ditto	3,047·49	2 4 3	...	6,904 8 3	6,453 3 4	451 5 11					
Ditto ditto ...	Miscellaneous poles ...	Pieces 239	0 1 3	each.	18 14 4	18 14 4	...					
Irrigation Department ...	Sal scantlings	1,296·21	2 13 5	Cubic feet.	3,680 3 10	3,360 3 19	320 0 0					
Horticulture Garden, Lucknow.	Ditto	42·66	1 8 0	...	63 15 10	63 15 10	...	16,823 6 2	8,659 8 8	20,482 14 10	19,402 2 3	...
Irrigation Department ...	Sal logs	631·40	1 8 0	...	947 1 7	947 1 7	...					
Ditto ditto ...	Asna logs	429·88	0 12 0	...	322 6 7	322 6 7	...					
Military Department ...	Sal scantlings	405·85	2 8 8	...	1,032 8 11	1,032 8 11	...					
Ditto ditto ...	Sal logs	339·68	2 0 0	...	679 5 9	679 5 9	...					
Ditto ditto ...	Pieces of sal logs ...	76·76	2 0 0	...	153 8 4	153 8 4	...					
Opium Department ...	Ditto ditto ...	891·11	0 11 6	...	642 0 0	642 0 0	...					
	Total ...	cft. 18,231·19 / pieces 239	...	...	39,885 1 0	38,075 8 6	1,809 8 6	16,823 6 2	8,659 8 8	20,482 14 10	19,402 2 3	...
KHERI DIVISION.												
Public Works Department, Kheri.	Sal logs	162·16	1 0 0	Cubic feet.	162 2 6	162 2 6	...	1,599 0 0	368 0 0	1,967 0 0	4,715 12 10	...
Ditto ditto ...	Sal scantlings	2,173·55	3 0 0	...	6,520 10 4	6,520 10 4	...					
	Total ...	Cft. 2,325·71	...	...	6,682 12 10	6,682 12 10	...	15,99 0 0	368 0 0	1,967 0 0	4,715 12 10	...
GRAND TOTAL ...	Cubic feet ... ... / Number of pieces ...	20,566·80 / 289	...	...	46,567 13 10	44,758 5 4	1,809 8 6	18,422 6 2	4,027 8 8	22,449 14 10	24,117 15 1	...
							Deduct surplus (or deficit)		...	...	...	
							Balance for the Department		...	...	24,117 15 1	

DATED NAINI TAL: The 27th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 65—(Suggested).

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Abstract showing the value of timber and other produce at sale depôts for the year 1881-82.

Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks.
	Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favor of the year.	Against the year.	
Sal logs	513	24,406	18,304	771	41,832	31,374	...	...	
Asna logs	419	22,512	7,035	16	778	243	...	...	
Deodar logs ...	1	74	130	...	...	...	...	...	
Sal scantlings ...	188064 and 4 stacks.	10,101	7,575	159,513 2 stacks.	11,293	8,470	...	...	Stacks of sal scantlings.
" " (Lucknow depôt).	128	148	113	128	148	113	...	...	
Pieces of sal logs ...	41	891	445	...	...	...	...	...	
Asna scantlings ...	...	...	...	56	391	195	...	...	
Deodar " ...	...	...	...	24	33	25	...	...	
Miscellaneous ballies (poles).	563	...	105	246	...	46	...	...	
Charcoal	...	...	..	206	Maunds	62	...	...	
Large boats ...	54	...	27,000	35	...	17,500	...	...	
Canoes	5	...	100	4	...	80	...	...	
" (Dharmapur) ...	472	...	9,440	465	...	9,300	...	...	
Total ...	190260 and 4 stacks.	58,132	70,247	161,258 2 stacks and 206	54,475 Maunds.	67,408	...	2,839	

Naini Tal:
The 27th July, 1882.

E. WOOD, Captain,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 65A.—(Suggested).

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Abstract showing the value of timber and other produce at depôts other than sale depôts, during the year 1881-82.

Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks.
	Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favor of the year.	Against the year.	
Sal logs	11,037	483,330	241,665	11,865	456,118	228,059	...	...	
Asna logs	747	27,200	3,400	820	31,317	3,915	...	...	
Sissu logs	...	...	...	531	13,304	3,326	...	...	
Sal sleepers ...	...	...	...	6,265	6,439	6,439	...	...	
" scantlings ...	...	...	...	99	486	486	...	...	
" karries	249	343	343	200	302	302	...	...	
" ballas	1,515	...	303	1,499	...	300	...	...	
" koras	19	...	4	19	...	4	...	...	
" golas	134	...	27	134	...	27	...	...	
Firewood	8,203	Maunds.	861	66	...	7	...	...	
Charcoal	547	"	55	...	...	...	...	...	
Canoes	517	...	12,340	714	...	16,280	...	...	
Large boats ...	36	...	14,200	53	...	21,000	...	...	
Total ...	14,854 8,750	510,873 Maunds.	273,198	22,200 66	507,966 Maunds.	280,145	6,947	...	

Naini Tal:
The 27th July, 1882.

E. WOOD, Captain,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

FORM No. 65B.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of Live and Dead Stock for the year 1881-82.

Description of live and dead stock.	On hand at the commencement of the year.		On hand at the close of the year.		Difference in value.	
	No.	Value.	No.	Value.	In favor of the year.	Against the year.
DIRECTION DIVISION.		Rs.		Rs.		Rs.
Dead Stock.						
3. Tools	1	1	1	1		
4. Office furniture	52	129	53	150		
5. Tents and equipages	7	210	9	270		
7. Miscellaneous	4	4	4	4		
Total ...	64	344	67	425	81	...
PILIBHIT DIVISION.						
Live Stock.						
Elephant	1	2,300	1	1,900		
Bullocks	4	160	4	160		
Dead Stock.						
1. Surveying and other instruments	17	8	22	13		
2. Machinery	2	31	2	31		
3. Tools	56	57	117	61		
4. Office furniture	17	59	11	62		
5. Tents and equipages	5	86	3	120		
7. Miscellaneous	120	185	284	506		
Country carts	2	80	2	80		
Buildings	5	2,500	7	3,500		
Total ...	259	5,466	453	6,433	967	...
BHIRA SUB-DIVISION.						
Live Stock.						
Bullocks	4	160	4	160		
Dead Stock.						
1. Surveying and other instruments	16	80	20	85		
3. Tools	122	40	81	49		
4. Office furniture	40	88	36	89		
5. Tents and equipages	8	249	4	190		
6. Building materials, small stores and house fittings,	71	164	152	396		
7. Miscellaneous	107	162	51	144		
Country carts	2	80	2	80		
Buildings	4	9,000	6	10,050		
Total ...	374	10,023	356	11,243	1,220	...
KHERI DIVISION.						
Live Stock.						
Elephants	3	11,600	3	7,400		
Bullocks	8	200	7	175		
Buffaloes	10	100	9	90		
Dead Stock.						
1. Surveying and other instruments	13	695	13	695		
3. Tools	2,227	1,661	2,840	1,722		
4. Office furniture	270	921	271	946		
5. Tents and equipages	9	312	9	212		
6. Building materials, small stores and house fittings,	...	941	...	1,092		
7. Miscellaneous	186	1,013	969	1,541		
Country carts	10	200	18	280		
Buildings	7	22,300	9	28,869		
Total ...	2,743	39,943	3,648	43,113	3,170	

FORM No. 65B.—(SUGGESTED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Abstract showing the value of Live and Dead Stock for the year 1881-82—(concluded).

Description of live and dead stock.	On hand at the commencement of the year.		On hand at the close of the year.		Difference in value.	
	No.	Value.	No.	Value.	In favor of the year.	Against the year.
		Rs.		Rs.	Rs.	
BAHRAMGHÁT DIVISION.						
Live Stock						
Buffaloes	10	100	9	90		
Dead Stock.						
1. Surveying and other instruments	49	121	49	121		
2. Machinery	24	27,000	24	27,000		
3. Tools	377	1,464	503	1,449		
4. Office furniture	78	359	80	371		
6. Building materials, small stores and house fittings,	6	16	6	16		
7. Miscellaneous	...	428	...	182		
Timber transport cart	1	50	2	250		
Country carts	5	50	5	50		
Buildings	...	...	2	10,000		
Total ...	550	29,588	680	39,529	9,941	
BAHRAICH DIVISION.						
Live Stock						
Elephants	2	3,600	1	1,000		
Buffaloes	1	10	1	10		
Dead Stock.						
1. Surveying and other instruments	45	359	40	368		
3. Tools	934	560	992	568		
4. Office furniture	201	477	157	414		
5. Tents and equipage	30	781	37	782		
6. Building materials, small stores and house fittings,	167	114	207	204		
7. Miscellaneous	72	144	531	73		
Buildings	9	15,000	13	22,000		
Total ...	1,462	21,045	1,979	25,419	4,374	
GONDA DIVISION.						
Live Stock.						
Elephant	1	2,000	1	1,500		
Dead Stock.						
1. Surveying and other instruments	1	25	1	20		
3. Tools	309	236	306	240		
4. Office furniture	43	265	43	250		
5. Tents and equipage	2	200	2	150		
6. Building materials, small stores and house fittings,	14	5	10	4		
7. Miscellaneous	2	2	2	2		
Buildings	...	...	2	4,000		
Total ...	365	2,733	367	6,166	3,433	
GORAKHPUR DIVISION.						
Live Stock.						
Elephant	1	2,000	1	1,500		
Dead Stock.						
1. Surveying and other instruments	13	103	10	90		
2. Machinery	1	150	1	150		
3. Tools	133	128	148	143		
4. Office furniture	52	201	20,109	629		
5. Tents and equipage	5	400	5	400		
7. Miscellaneous	132	81	66	40		
Buildings	4	3,800	5	4,800		
Total ...	341	6,863	20,345	7,752	889	
GRAND TOTAL ...	6,158	1,16,005	27,895	1,40,080	24,075	

NAINI TAL:
The 27th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDIX A.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

List of Buildings 1881—82.

Number.	Division.	Names.	Property of	Rent when occupied per month.	Amount paid by officer during the year.	Remarks.
					Rs. a. p.	
1	Pilibhit	Forest 3rd class rest-house, Mahofe	Forest Department ...	...	...	
2	Ditto ...	Ditto ditto, Chorghatti	Ditto ...	...	...	
3	Ditto ...	Ditto ditto, Mustafabad	Ditto ...	...	...	
4	Ditto ...	Ditto ditto, Barua Kuthara	Ditto ...	...	...	
5	Ditto ...	Ditto ditto, Haripur	Ditto ...	...	...	
6	Ditto ...	Ditto ditto, Barahi	Ditto ...	...	...	
7	Ditto ...	Ditto ditto, Chuka	Ditto ...	...	...	
8	Bhira Sub-division ...	Ditto 1st ditto, Gola	Ditto ...	...	...	
9	Ditto ...	Ditto „ ditto, Marha	Ditto ...	...	...	
10	Ditto ...	Ditto 3rd ditto, Marha	Ditto ...	...	...	
11	Ditto ...	Ditto ditto, Kishenpur	Ditto ...	...	...	
12	Ditto ...	Ditto ditto, Kukra	Ditto ...	...	...	
13	Ditto ...	Ditto ditto, Bhira	Ditto ...	...	...	
14	Kheri	Head quarters, Lakhimpur office, and rest-house	Ditto ...	Rs. 25 by officer, and Rs. 25 by office.	16 8 6	Rs. 114 due by Mr. Battle, who has been called on to pay.
15	Ditto ...	Forest 1st class rest-house, Sathiana	Ditto ...	...	...	
16	Ditto ...	Ditto ditto, Fort Gourishah	Ditto ...	...	...	
17	Ditto ...	Ditto ditto, Shitaba Ghat	Ditto ...	...	...	
18	Ditto ...	Ditto ditto, Bilrain Dih	Ditto ...	...	...	
19	Ditto ...	Ditto ditto, Dudua	Ditto ...	...	...	
20	Ditto ...	Ditto 2nd ditto, Dudua	Ditto ...	...	...	
21	Ditto ...	Ditto ditto, Sonaripur	Ditto ...	...	...	
22	Ditto ...	Ditto ditto, Naurangabad	Ditto ...	...	...	
23	Bahramghat ...	Timber depôt, Bahramghat	Ditto ...	...	...	
24	Ditto ...	Ditto ditto	Ditto ...	...	...	
25	Bahraich ...	Head-quarters, Bahraich office, and rest-house	Ditto ...	Rs. 30 by officer, and Rs. 20 by office.	15 0 0	Paid by Mr. Dansey.
26	Ditto ...	Forest 1st class rest-house, Nishangara	Ditto ...	...	...	
27	Ditto ...	Ditto (single storied) Sujauli	Ditto ..	...	...	
28	Ditto ...	Ditto ditto, Motipur	Ditto ...	...	...	
29	Ditto ...	Ditto ditto, Kharaincha	Ditto ...	...	...	
30	Ditto ...	Ditto ditto, Sohelwa	Ditto ...	...	...	
31	Ditto ...	Ditto 3rd ditto, Nishangara	Ditto ...	...	...	
32	Ditto ...	Ditto ditto, Motipur	Ditto ...	...	...	
33	Ditto ...	Ditto ditto, Kharaincha	Ditto ...	...	...	
34	Ditto ...	Ditto ditto, Charda	Ditto ...	...	...	
35	Ditto ...	Ditto ditto, Kahardari	Ditto ...	...	...	
36	Ditto ...	Ditto ditto, Ponsonbyganj...	Ditto ...	...	...	
37	Ditto ...	Ditto 2nd ditto, Sohelwa	Ditto ...	...	...	
38	Gonda	Ditto 3rd ditto, Bhugwanpur	Ditto ...	...	...	
39	Ditto ..	Ditto ditto, Chandanpur	Ditto ...	...	...	
40	Gorakhpur ...	Ditto 2nd ditto, Chauk	Ditto ...	...	...	
41	Ditto ...	Ditto ditto, Sakhui	Ditto ...	...	...	
42	Ditto ...	Ditto ditto, Daibhar	Ditto ...	...	...	
43	Ditto ...	Ditto ditto, Mandhaulia	Ditto ...	...	...	
44	Ditto ...	Ditto 3rd ditto, Ramgarh	Ditto ...	...	...	
		Total	...	...	31 8 6	

NAINI TAL:
The 27th July, 1882.

E WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDIX B.

Forest Department, North-Western Provinces and Oudh, Oudh Circle.

Statement of forest produce given free to the privileged villages.

Division.	Name of produce given free.	Quantity.	Rate.	Amount.	Total of each section.
			Rs. a. p.	Rs. a. p.	Rs. a. p.
Bahraich Division.	**Motipur Sub-Division.**				
	Section I.				
	Saplings	8,306 in number ...	0 1 0 each.	519 2 0	
	Posts	660 „ ...	0 1 0 „	41 4 0	
	Props	373 „ ...	0 1 0 „	34 15 6	
	Sardels	268 „ ...	0 2 0 „	33 8 0	
	Ridgepoles	135 „ ...	0 4 0 „	33 12 0	
	Withes	1,133 head loads ...	0 0 9 „	53 1 9	
	Firewood	67 cart „ ...	0 1 6 „	6 4 6	
	Ditto	3,989 head „ ...	0 0 1 „	20 12 5	
	Grass	10,239 „ ...	0 0 3 „	159 15 9	
					902 11 11
	Section II.				
	Saplings	31,545 in number ...	0 1 0 „	1,971 9 0	
	Posts	2,913 „ ...	0 1 0 „	182 1 0	
	Props	2,540 „ ...	0 1 6 „	144 6 0	
	Sardels	908 „ ...	0 2 0 „	113 8 0	
	Ridgepoles	391 „ ...	0 4 0 „	97 12 0	
	Withes	715 head loads ...	0 0 9 „	33 8 3	
	Firewood	929 cart „ ...	0 1 6 „	87 1 0	
	Ditto	20,706 head „ ...	0 0 1 „	107 13 6	
	Grass	151 cart „ ...	0 4 0 „	37 12 0	
	Do.	40,412 head „ ...	0 0 3 „	631 7 0	
	Reeds	310 „ ...	0 0 3 „	4 13 6	
	Khagur	4,473 „ ...	0 0 1 „	23 4 9	
					3,435 0 0
	Section III.				
	Saplings	74,214 in number ...	0 1 0 „	4,638 6 0	
	Posts	6,774 „ ...	0 1 0 „	423 6 0	
	Props	4,228 „ ...	0 1 6 „	396 6 0	
	Sardels	3,084 „ ...	0 2 0 „	385 8 0	
	Ridgepoles	1,538 „ ...	0 4 0 „	384 8 0	
	Withes	527 head loads ...	0 0 9 „	25 2 9	
	Firewood	554 cart „ ...	0 1 6 „	51 15 0	
	Ditto	56,126 head „ ...	0 0 1 „	292 5 2	
	Grass	294 cart „ ...	0 4 0 „	73 12 0	
	Agai leaves	111 head „ ...	0 0 9 „	5 3 3	
					6,676 8 2
	Section IV.				
	Saplings	54,877 in number ...	0 1 0 „	3,429 13 0	
	Posts	9,219 „ ...	0 1 0 „	576 3 0	
	Props	4,565 „ ...	0 1 6 „	427 15 6	
	Sardels	4,157 „ ...	0 2 0 „	519 10 0	
	Ridgepoles	560 „ ...	0 4 0 „	140 0 0	
	Withes	7,382 head loads ...	0 0 9 „	346 0 6	
	Firewood	1,177 cart „ ...	0 1 6 „	110 5 0	
	Ditto	4,422 head „ ...	0 0 1 „	23 0 6	
	Grass	29,970 „ ...	0 0 3 „	358 14 6	
	Do.	794 cart „ ...	0 4 0 „	198 8 0	
					6,130 6 0
		Total ...	...	...	17,144 10 1
	Bhinga Sub-Division.				
	Section V.				
	Saplings	56,906 in number ...	0 1 0 each.	3,556 10 0	
	Props	4,001 „ ...	0 1 6 „	375 1 6	
	Posts	7,459 „ ...	0 1 0 „	466 3 0	
	Sardels	2,752 „ ...	0 2 0 „	344 0 0	
	Ridgepoles	1,394 „ ...	0 4 0 „	348 8 0	
	Withes	5,566 head loads ...	0 1 0 „	366 10 0	
	Khopies	543 „ ...	0 0 3 „	8 7 9	
	Karries	51,616 „ ...	0 2 0 „	6,452 0 0	
	Kanta	10,416 „ ...	0 0 1 „	54 4 0	
	Firewood	163 cart „ ...	0 1 6 „	15 4 6	
	Grass	168,703 head „ ...	0 0 3 „	2,635 15 9	
	Janghas	926 in number ...	0 0 3 „	14 7 8	
					14,637 8 0
	Section VI.				
	Saplings	804 „ ...	0 1 0 „	50 4 0	
	Props	133 „ ...	0 1 6 „	12 7 6	
	Posts	1,123 „ ...	0 1 0 „	70 3 0	
	Sardels	69 „ ...	0 2 0 „	8 10 0	
	Ridgepoles	95 „ ...	0 4 0 „	23 12 0	
	Withes	7980 head loads ...	0 1 0 „	498 12 0	
	Khopies	84 in number ...	0 0 3 „	1 5 0	
	Karries	5,755 head loads ...	0 2 0 „	719 6 0	
	Janghas	50 „ ...	0 0 3 „	0 12 6	
	Firewood	73 cart „ ...	0 1 6 „	6 13 6	
	Ditto	2,558 head „ ...	0 0 1 „	13 5 2	
	Reeds	1,013 „ ...	0 0 6 „	31 10 6	
	Grass	546 „ ...	0 0 3 „	8 8 6	
	Sarawans	197 in number ...	0 4 0 „	49 4 0	
	Okhelies	4 „ ...	0 2 0 „	0 8 0	
					1,495 9 8

APPENDIX B.

FOREST DEPARTMENT NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Statement of forest produce given free to the privileged villages—(continued).

Division	Name of produce given free.	Quantity.	Rate.	Amount.	Total of each section.
	Section VII.		Rs. a. p.	Rs. a. p.	Rs. a. p.
BAHRAICH DIVISION—(concluded).	Saplings	105,979 in number ...	0 1 0 each,	6,623 11 0	
	Props	1,071 " ...	0 1 6 "	100 6 6	
	Posts	13,242 " ...	0 1 0 "	827 10 0	
	Sardels	4,787 " ...	0 2 0 "	598 6 0	
	Ridgepoles	2,364 " ...	0 4 0 "	591 0 0	
	Withes	22,737 head loads ...	0 1 0 "	1,421 1 0	
	Khopies	8,037 " ...	0 0 3 "	125 9 3	
	Karries	6 " ...	0 2 0 "	0 12 0	
	Janghas	5,107 " ...	0 0 3 "	79 12 9	
	Firewood	113 cart loads ...	0 1 6 "	10 9 6	
	Ditto	67 " ...	0 3 0 "	12 9 0	
	Ditto	559 head loads ...	0 0 1 "	2 14 7	
	Sarawans	1,325 in number ...	0 4 0 "	331 4 0	
	Okhelies	27 " ...	0 2 0 "	3 6 0	
	Grass	359,444 bundles ...	400 bundles per rupee.	898 9 9	
	Reeds	38 head loads ...	0 0 6 each,	1 3 0	
	Kanta	457 " ...	0 0 1 "	2 6 1	
	Machies	692 in number ...	0 1 0 "	43 4 0	
					11,674 6 5
	Section VIII.				
	Saplings	67,383 in number ...	0 1 0 each,	4,211 7 0	
	Props	4,966 " ...	0 1 6 "	465 9 0	
	Posts	1,005 " ...	0 1 0 "	62 13 0	
	Sardels	2,408 " ...	0 2 0 "	301 0 0	
	Ridgepoles	1,741 " ...	0 4 0 "	435 4 0	
	Withes	9,311 head loads ...	0 1 0 "	581 15 0	
	Khopies	1,627 in number ...	0 0 3 "	25 6 9	
	Janghas	973 " ...	0 0 3 "	15 3 3	
	Firewood	205 cart loads ...	0 1 6 "	19 3 6	
	Ditto	2,457 head loads ...	0 0 1 "	12 12 9	
	Sarawans	133 in number ...	0 4 0 "	33 4 0	
	Okhelies	45 " ...	0 2 0 "	5 10 0	
	Grass	605,860 bundles ...	400 bundles per rupee.	1,514 9 7	
	Reeds	7,366 head loads ...	0 0 6 each,	230 3 0	
	Machies	146 in number ...	0 1 1 "	9 2 0	7,923 6 10
		Total, Bhinga Sub-division.	...	...	35,730 14 11
		Total, Motipur Sub-division.	...	...	17,144 10 1
		GRAND TOTAL ...	...	...	52 875 9 0
	Newalkhar Sub-division.				
KHERI DIVISION.	Saplings	277 cart loads ...	1 0 0 per cart load.	277 0 0	
	Props and posts ...	153 " ...	Ditto ...	153 0 0	
	Ghuras unreserved wood ...	314 number ...	0 2 0 each,	39 4 0	
	Dry reserved wood ...	91 cart loads ...	3 8 0 per cart load.	318 8 0	
	Bundairs	84 " ...	1 0 0 "	84 0 0	
	Firewood	1,235 " ...	0 1 6 "	115 12 6	
	Thatching grass ...	1,113 " ...	0 2 0 "	139 2 0	
	Reeds	604 " ...	0 6 0 "	226 8 0	
	Munj	66 " ...	1 8 0 "	99 0 0	
	Khagar grass	461 " ...	0 6 0 "	172 14 0	
					1,625 0 6
	Khairigarh Sub-division.				
	Saplings	3,375 cart loads ...	1 0 0 per cart load.	3,375 0 0	
	Props and posts ...	1,495 " ...	Ditto ...	1,495 0 0	
	Gharas	121 " ...	0 8 0 "	60 8 0	
	Bundairs	175 " ...	1 0 0 "	175 0 0	
	Thatching grass ...	5,737 " ...	0 2 0 "	719 2 0	
	Reeds	2,786 " ...	0 6 0 "	1,044 12 0	
	Khagar grass	2,635 " ...	0 6 0 "	988 2 0	
	Munj	271 " ...	1 8 0 "	406 8 0	
	Firewood	4,369 " ...	0 1 6 "	409 5 0	
	Ploughs (Harkhod) ...	113 " ...	0 8 0 "	56 8 0	8,729 13 0
		Total, Newalkhar Sub-division.	...	...	1,625 0 6
		Total, Khairigarh Sub-division.	...	...	8,729 13 0
		GRAND TOTAL ...	...	...	10,354 13 6

APPENDIX B.

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, OUDH CIRCLE.

Statement of forest produce given free to the privileged villages—(concluded).

Division.	Name of produce given free.	Quantity.	Rate.	Amount.	Total of each section.
	Section I.		Rs. a. p.	Rs. a. p.	Rs. a. p.
GONDA DIVISION.	Unreserved props ...	1,073 in number ...	0 4 0 each	269 8 0	
	Ditto posts ...	2,386 ,, ...	0 1 0 ,,	149 2 0	
	Ditto poles ...	2,267 head loads ...	0 1 0 ,,	141 11 0	
	Ditto bati ...	1,313 ,, ...	0 1 0 ,,	82 1 0	
	Ditto santa ...	865 ,, ...	0 1 0 ,,	54 1 0	
	Ditto parodha ...	931 ...	0 2 0 ,,	116 6 0	
	Ditto bandair ...	409 ...	0 4 0 ,,	102 4 0	
	Firewod	54 head loads ...	0 0 1 ,,	0 4 6	
	Ditto	182 cart loads ...	0 1 6 ,,	1 11 0	
	Ditto	154 ,, ...	0 3 0 ,,	2 13 0	
	Santhoa reeds	298 head loads ...	0 0 6 ,,	9 5 0	
	Long grass	10,667 ,, ...	0 0 1 ,,	55 8 11	
					984 11 5
	Section II.				
	Unreserved poles ...	2,944 head loads, ...	0 1 0 each	184 0 0	
	Ditto bati ...	2,412 ,, ...	0 1 0 ,,	150 12 0	
	Long grass	5,484 ,, ...	0 0 1 ,,	28 9 0	
	Saintha (reeds)... ...	109 ,, ...	0 0 6 ,,	3 6 6	
	Bankas	15 ,, ...	0 0 9 ,,	0 11 3	
	Unreserved props ...	873 ...	0 4 0 ,,	218 4 0	
	Ditto posts ...	600 ...	0 2 0 ,,	75 0 0	
	Ditto bandairs ...	406 ...	0 4 0 ,,	101 8 0	
	Ditto parodha ...	680 ...	0 4 0 ,,	170 0 0	
	Firewood	162 cart loads ...	0 1 6 ,,	1 8 0	
					938 10 9
	Section III.				
	Firewood	483 head loads ...	0 0 1 each	2 8 3	
	Unreserved bati ...	1,900 ,, ...	0 1 0 ,,	128 12 0	
	Ditto poles ...	2,611 ,, ...	0 1 0 ,,	163 3 0	
	Ditto santa ...	28 ,, ...	0 1 0 ,,	1 12 0	
	Ditto parodha ...	928 ...	0 2 0 ,,	116 0 0	
	Ditto parodha (props),	792 ...	0 4 0 ,,	198 0 0*	
	Ditto posts ...	2,213 ...	0 2 0 ,,	276 10 0	
	Firewood	3,572 cart loads ...	0 1 6 ,,	33 7 6	
	Unreserved bandairs ...	246 ...	0 8 0 ,,	123 0 0	
	Bati	62 cart loads ...	0 8 0 ,,	3 0 0	
	Long grass	4,202 head loads ...	0 0 1 ,,	21 14 2	
	Ditto	1,482 cart loads ...	0 2 0 ,,	18 8 0	
	Saitha (reeds)	261 head loads ...	0 0 6 ,,	8 2 6	
	Unreserved haingas ...	3 ...	0 3 0 ,,	0 9 0	
	Ditto doonds ...	1 ...	1 0 0 ,,	1 0 0	
					1,096 6 5
	Section IV.				
	Unreserved poles ...	10,599 head loads ...	0 1 0 each	662 7 0	
	Ditto bati ...	9,874 ,, ...	0 1 0 ,,	617 2 0	
	Ditto props ...	2,095 ...	0 4 0 ,,	523 12 0	
	Ditto posts ...	5,006 ...	0 2 0 ,,	625 12 0	
	Ditto bandaris ...	846 ...	0 4 0 ,,	211 8 0	
	Ditto parodha ...	1,970 ...	0 2 0 ,,	246 4 0	
	Firewood	22,342 cart loads ...	0 1 6 ,,	209 7 0	
	Unreserved khopic jangha,	57 head loads ...	0 1 0 ,,	3 9 0	
	Ditto jothas ...	5 in number ...	0 1 0 ,,	0 5 0	
	Ditto hainga ...	31 ,, ...	0 3 0 ,,	5 13 0	
	Long grass	9,172 cart loads ...	0 2 0 ,,	114 10 0	
	Saintha (reeds)... ..	296 head loads ...	0 0 6 ,,	9 4 0	
	Elephants grazed in Government Forests.	1,375 ...	0 1 0 ,,	85 15 0	
					3,315 12 0
	Ditto ditto ...	378 ...	0 1 0 ,,	...	23 10 0
	GRAND TOTAL ...	...	...	...	6,354 2 7
	GRAND TOTAL OF ALL ...	...	...	...	69,584 9 1

* Grazed in Section No. III.

NAINI TAL:
The 25th July, 1882.

E. WOOD, CAPTAIN,
Conservator of Forests, N.-W. P. and Oudh, Oudh Circle.

APPENDIX C.

Extract from Alexander Von Humboldt's Travels to the Equinoctical Regions of America during the years 1799—1804.

Origin of Savannahs—Vol. I., chapter vi, page 242. Translation by T. Ross, 3 vols, Henry Bohn, Publisher, London, 1852.

Wherever the sandstone appears above ground the soil is level, and constitutes as it were small platforms; succeeding each other like steps. To the height of 700 toises and even beyond, this mountain, like those in the vicinity, is covered only with gramineous plants. The absence of trees is attributed at Cumana to the great elevation of the ground; but a slight rejection on the distribution of plants in the Cordelleras of the torird zone will lead us to conceive that the summits of New Andalasia are very far from reaching the superior limit of the trees, which in this latitude is at least 1,800 toises of absolute height. The smooth turf of the Cocollar begins to appear at 350 toises above the level of the sea, and the traveller may contrive to walk upon this turf till he reaches a thousand toises in height. Further on, beyond this land covered with gramineous plants, we found, amidst peaks almost inaccessible to man, a small forest of cedrela, gavillo, and mahogany. These local circumstances induce me to think that the mountainous Savannahs of the Cocollar and Turinaiquiri owe their existence only to the destructive custom practised by the natives of setting fire to the woods when they want to convert the soil into pasturage. Where, during the lapse of three centuries, grasses and alpine plants have covered the soil with a thick carpet, the seeds of trees can no longer germinate and fix themselves in the earth, though birds and winds convey them continually from the distant forests into the Savannahs.

APPENDIX D.

Note by CAPTAIN E. S. WOOD *on the growth of Sál in the Government Botanical Gardens at Saháranpur.*

I ANNEX extract from Mr. Duthie's report, published in Part VI., page 260, of the *North-Western Provinces and Oudh Gazette* dated September 9th, 1882 :—

EXTRACT.

" *Girth measurement of Sál Trees.*—These measurements have been made in accordance with a wish expressed by Captain Wood, Conservator of Forests, Oudh Circle, in a letter forwarded through your office. Since that time a monthly record has been kept of the girth of a certain number of sál trees growing in this garden.

" The trees of group I. and II. are, as far as I am able to ascertain, a little over 30 years of age. Those of group III. are probably much older, but how much I am unable to say. The bungalow beside which they are standing was built in 1842 or 1843, and as these trees form part of an avenue leading from the bungalow to the high road, they cannot very well be more than forty years old.

" In 1866 Dr. Brandis measured some of the sál trees in the Saháranpur Garden and recorded the following results in the *Forest Flora*, page 27 :—

Age of trees.				*Girth.*		
13 years	...	...	...	27 inches (average of 33 trees).		
30 „	...	...	...	54½	ditto	ditto.
35 „	...	...	...	69*	ditto	ditto.

" Their respective ages would now be 32, 49, and 54 years. The three trees mentioned in group I. of the following statement are in all probability of the same set as those mentioned by Dr. Brandis as being 13 years old in 1863 and with a girth of

Note.—See after ; should be 79½ inches—E. W.

27 inches. During 19 years, therefore the average growth, has been about 16 inches. The periods during which the growth of each tree has taken place since January, 1881, are clearly brought out in the following table :—

Month.	I.—Old brick hill.			II.—Superintendent's compound.				III.—Head Gardener's compound.		Remarks.
	1	2	3	1	2	3	4	1	2	
1881.	In.	In.	In.	In.	In.	In.	In.	In.	In.	
1st January ...	49⅛	45⅞	33⅛	62⅛	56⅜	56	48	67¼	58⅞	
„ February ...	49⅛	45⅛	33⅛	62⅛	56⅜	56	48	67¼	58⅞	
„ March ...	49⅛	45⅛	33⅛	62⅛	56⅜	56	48	67¼	58⅞	
„ April ...	49⅛	45⅛	33⅛	62⅛	56⅜	*56⅛	*48⅛	67¼	58⅞	No. 4 of group II. was originally printed 48⅞, now ⅛. —E.W.
„ May ...	*49¼	*45¼	*33¼	*62⅝	*56⅛	*56¼	48⅛	*67½	*59	
„ June ...	49⅞	45⅞	*33⅜	*62¾	*56⅞	*56⅜	48⅛	67½	*59⅛	
„ July ...	*49⅜	*45⅜	*33⅜	*62⅞	*57⅛	56⅜	48⅛	*67⅝	*59⅜	
„ August ...	*49¾	*45¾	*33¾	*63⅛	*57¼	*56½	48⅛	*67⅞	*60	
„ September ...	*50⅛	*46	*34⅛	*63⅜	*57½	*57	48⅛	*68⅛	*60¼	The growths of No. 3 of I. and 1 of III. are abnormal. —E.W.
„ October ...	*50⅜	*46⅜	†34	*63¾	*58	*57½	*48¾	*68¾	*60⅝	
„ November ...	*50⅝	*46⅛	*34¼	63¾	*58⅛	*57⅝	48¾	†68⅛	*60¾	
„ December ...	50⅝	46½	34¼	*64	*58¼	*57¾	*48⅞	68½	60¾	
1882.										
1st January ...	50⅝	46½	34¼	64	58¼	57¾	48⅞	68½	60¾	
„ February ...	50⅝	46½	34¼	64	58¼	57¾	48⅞	68½	60¾	
„ March ...	50⅝	46½	34¼	64	58¼	57¾	48⅞	68½	60¾	
„ April ...	50⅝	46½	34¼	64	58¼	57¾	48⅞	68½	60¾	
„ May ...	*50⅝	46½	34¼	64	58¼	57¾	48⅞	68½	60¾	
„ June ...	†50⅝	†46⅝	34¼	64	58¼	†57⅛	†48¾	68½	60¾	

The leaves are shed during the month of March.

The trees are in full flower at the beginning of April.

N.B.—The figures marked with asterisks indicate growth ; those with obelisks show decrease of girth."

2. Mr. Duthie in quoting from Dr. Brandis' *Forest Flora* has inadvertently taken for the girth of the 35 year old tree the girth of the 25 year old tree in the Calcutta Garden ; the girth should be 79½ inches, not 69 inches.

3. I agree with Mr. Duthie in thinking that the trees in groups I. and II. are a little over 30 years of age. I believe them to be the trees 13 years old measured 19 years ago, and consequently 32 years of age ; but I do not agree with him in thinking that the two trees in group III. are older for the following reasons and for reasons given further on in this note :—

(1) Dr. Brandis in giving measurements of sál trees of known age, in which the Saháranpur trees are included, in a letter to the Chief Commissioner of Oudh, dated 23rd June, 1863, published with Oudh Forest Report, 1867-68, page 49, mentions when more than one tree was measured : thus he gives the average of 33 trees in the Saháranpur Gardens, of 20 in the Kosilla Valley, Kumaun, and of two in the Kotri Dún Forests, Garhwál ; so that I consider it extremely probable that the measurements of the Calcutta tree and the two large trees in the Saháranpur Gardens were measurements of single trees. (2) Neither of the trees in group III. could be the 35 year old tree of 1863, because that tree in 1863 was of greater girth than either of the two trees in 1881-82, and it is not probable that trees, which according to Mr. Duthie's own figures are making 1⅛″ (or more) increase of girth annually, would have been 54½″ 19 years ago ; at the rate of increase of girth of 1⅛″ annually (it will be shown hereafter that the trees are making more than 1⅛″ increase of girth per annum at the present time, and made a still larger increase of girth formerly), a tree then 54½″ would now be 54½″ + (1⅛″ × 19) = 54½″ + 21⅜″ = 75⅞″ ; whereas the two trees in group No. III. are only 68½″ and 60¾″ respectively, and their average girth, ½ (68½″ + 60¾″) = ½ (129¼″) = 64⅝″ is very little more than the girth of tree No. 1, in group II., which

is 64″0. (3) The soil in the old brick hill is probably not so good for sál as the soil in the Superintendent's compound, and the latter not so good as that in the Head Gardener's compound.

4. It is with Mr. Duthie's conclusion, "during 19 years therefore the average growth has been about 16 inches," that I beg to differ. (1) Mr. Duthie has evidently taken only the trees in group No. I. : thus $\frac{1}{3}$ ($50\frac{5}{8}'' + 46\frac{3}{8}'' + 34\frac{2}{8}''$) = $\frac{1}{3}$ ($131\frac{3}{8}''$) = $43\frac{3}{4}''$ or say = 43″. (The taking the average of the 33 trees is probably not correct; he chances are that the average of trees that are smaller now were comparatively smaller in 1863. But in the following calculations I will for the sake of argument take the average of the 13 year old trees, assuming also the probability that the average will be nearer for 7 and 9 trees than it is for 3 only; but the chances are that the larger trees were comparatively larger in 1863, and therefore the difference in girth less than in the calculation for the third group) 43″—27″ (the average of the trees in 1863) = 16″ in 1882, that is in 19 years. (2) If he had taken the trees of groups I. and II. together, which he might have done, for, as far as he can ascertain, the age of both groups is a little over 30 years, the increase would have been ($\frac{1}{7}$ ($131\frac{2}{8}'' + 64'' + 58\frac{2}{8}'' + 57\frac{5}{8}'' + 48\frac{6}{8}''$) = $\frac{1}{7}$ ($359\frac{7}{8}''$) = $51\frac{23}{56}''$—27″ = $24\frac{23}{56}''$ in 19 years. (3) But as I believe the trees in group III. are of the same age as those of the other groups, I will give the calculation ($\frac{1}{9}$ ($359\frac{7}{8}'' + 68\frac{4}{8}'' + 60\frac{6}{8}''$) = $\frac{1}{9}$ ($489\frac{1}{8}''$) = $54\frac{25}{72}''$—27″ = $27\frac{25}{72}''$ in 19 years. 16″ in 19 years = 0″·842 girth per annum, 0″·134 radius, or 1″ radius in 7·46 years. $24\frac{23}{56}''$ in 19 years = 1″·232 girth, 0″·196 radius, or 1″ in 5·10 years. $27\frac{25}{72}''$ in 19 years = 1″·439, 0″·229, or 1″ in 4·37 years.

5. These may be said to be theoretical calculations, so I will now give a practical one. The average increase of the 33 trees was in their young stage 27″ in 13 years, or 2″·077 girth per annum, 0″·330 radius, or 1″ radius in 3·03 years.

6. I will still continue with facts, taking Mr. Duthie's figures, for which he has earned the thanks of everybody interested in the growth of sál. There are a few omisions of asterisks and obelisks to some figures, and which in the reprint I have taken the liberty to correct (as they are self-evident), as also a figure which is evidently a misprint.* Mr. Duthie's figures corroborate certain facts noticed in the Oudh forests, *viz.*, that the whole growth is made in certain months. From January to June, 1882, there is no growth to speak of. No. 1 tree of group I. is shown to have made growth in May, 1882; but the probabilities are that some small thing caused a mismeasurement, as the measurement in June is the same as the measurements from December, 1881 to April, 1882. In 1881, however, most of the trees started growing in May, two having commenced in April. The autumn and cold-weather rains of 1881-82 were very light, whereas those of 1880-81 were good. Artificial irrigation may have been the cause of the early growth, but I should think the Saháranpur climate was fully a month earlier than that of the forests of Oudh. There is also the same fact noted that in the hot weather a few measurements were less than they were in the months before.

*In tree 4, group II., April, 1881, the fraction should be $\frac{1}{8}$th, not $\frac{1}{8}$ths.

7. In the Oudh forests measurements I have taken the growth from one June to another; I will now do the same with Mr. Duthie's figures:—

	Group I.	*Increase.*		*Group II.*	*Increase.*		*Group III.*	*Increase.*
1.	$49\frac{2}{8}$ $50\frac{6}{8}$	$1\frac{3}{8}$	1.	$62\frac{6}{8}$ 64	$1\frac{2}{8}$	1.	$67\frac{4}{8}$ $68\frac{4}{8}$	1
2.	$45\frac{2}{8}$ $46\frac{3}{8}$	$1\frac{1}{8}$	2.	$56\frac{7}{8}$ $58\frac{2}{8}$	$1\frac{3}{8}$	2.	$59\frac{4}{8}$ $60\frac{6}{8}$	$1\frac{2}{8}$
3.	$33\frac{3}{8}$ $34\frac{2}{8}$	$\frac{7}{8}$	3.	$56\frac{3}{8}$ $57\frac{5}{8}$	$1\frac{2}{8}$			
			4.	$48\frac{1}{8}$ $48\frac{6}{8}$	$\frac{5}{8}$			
		3) $3\frac{3}{8}$			4) $4\frac{2}{8}$			2) $2\frac{2}{8}$
	Mean ...	$1\frac{1}{8}$		Mean ...	$1\frac{1}{8}$		Mean ...	$1\frac{1}{8}$

This gives an actual increase of $1\frac{1}{8}''$ girth average for each group, and exactly the same for the 9 trees; this is 1″·125 increase of girth per annum, 0″·179 of radius, or 5·58 years per inch of radius.

8. But as the real enquiry is not what the tree makes from one June to another (unless it were one year among many), but what the increase of girth is in one year, I will take the actual increase in one year, *viz.* in 1881 :—

Group I.		Increase.	Group II.		Increase.	Group III.		Increase.
1. $49\frac{1}{8}$	$50\frac{5}{8}$	$1\frac{4}{8}$	1. $62\frac{4}{8}$	64	$1\frac{4}{8}$	1. $67\frac{3}{8}$	$68\frac{4}{8}$	$1\frac{2}{8}$
2. $45\frac{1}{8}$	$46\frac{4}{8}$	$1\frac{3}{8}$	2. $56\frac{3}{8}$	$58\frac{2}{8}$	$1\frac{7}{8}$	2. $58\frac{7}{8}$	$60\frac{6}{8}$	$1\frac{7}{8}$
3. $33\frac{1}{8}$	$34\frac{2}{8}$	$1\frac{1}{8}$	3. 56	$57\frac{6}{8}$	$1\frac{6}{8}$			
			4. 48	$48\frac{7}{8}$	$\frac{7}{8}$			
		3) 4			4) 6			$2)\ 3\frac{1}{8}$
Mean ...		$1\frac{16}{48}$	Mean ...		$1\frac{44}{48}$	Mean ...		$1\frac{37}{48}$

or the 9 trees made $4'' + 6'' + 3\frac{1}{8}'' = 13\frac{1}{8}''$ increase of girth, or an average of $1\frac{11}{24}''$ per tree or $1''{\cdot}458$ increase of girth per annum $= 0''{\cdot}232$ radius, or 4·31 years per inch of radius.

9. I return to calculations. These figures, I think, support my assumption in para. 4, that the trees have made at the rate of 1″ radius in 4·37 years, and that the trees of No. III. group are of the same age as those of Nos. I. and II.

10. This assumption I think further supported by the fact that the trees in group III. have made more vigorous growth during the year than the other trees, and the probabilities are that these trees in their younger stage also made more rapid growth than the others in groups I. and II.

If we take the 9 trees to be 32 years old, we have an aggregate of $489\frac{1}{8}''$ in June, 1882, an average girth of $54\frac{35}{72}''$ (Dr. Brandis measured a tree of 30 years in the garden $54\frac{1}{2}''$, so the calculated average of 32 years is not far from the actual trees of 30 years.)

11. The average girth of the 9 trees is $54\frac{35}{72}''$ or $54''{\cdot}3472$. These if 32 years of age give an actual yearly increase of $1''{\cdot}698$ girth per annum, and as it has been proved that the increase was at the rate of $2''{\cdot}077$ girth in the first 13 years and 1·458 in the 32nd year, it appears to me that the average supposed growth of $1''{\cdot}698$ girth per annum is extremely probable.

12. If to the known girth of the tree at 13 years of age, *viz.*, 27″, we add 19 years at the present known growth $(19 \times 1''{\cdot}458'') = 27''{\cdot}702$, we have $54''{\cdot}702$, which is very close to the actual average girth of $54''{\cdot}3472$.

13. The growth of $1''{\cdot}698$ girth per annum is $0''{\cdot}2703$ radius per annum, or 3·69 years to make an inch of radius.

The selected trees in Kheri (Trans-Sarda), para. 83(c^1) of this report, in 1881, about the same size as the trees in the Sahâranpur Garden, showed growth a little over four years per inch of radius and some newly-measured trees showed an increase of an inch of radius in less than three years ; so that there is apparently not so much difference as was thought between trees in cultivation and trees in good soil situated under favorable circumstances in the forests.

14. But to be on the safe side I will only take the trees of groups I. and II., which, as far as Mr. Duthie can learn, are a little over 30 years old, and which in every probability were the trees measured by Dr. Brandis, and consequently 32 years of age. The aggregate girth of the 7 trees in June, 1882, was $359\frac{7}{8}''$, giving an average of $51\frac{33}{56}''$ or $51''{\cdot}4107$.

This in 32 years is $1''{\cdot}6068$ increase of girth, or 1″ radius in a fraction less than four years (3·91), and, as has been shown before, the trees made at the rate of 1″ radius in 3·03 years for the first 13 years of their lives.

15. To sum up : Mr. Duthie's conclusion only gives $\frac{16}{19}''$ girth increase per annum, or at the rate of 1″ radius in 7·46 years. Actual measurements of trees in group I. show that they are now increasing at the rate of 1″ of radius in 4·71 years ; of trees in group II. at the rate of 1″ of radius in 4·18 years ; of trees in group III. at the

rate of 1″ of radius in 4·01 years; of trees in groups I. and II. at the rate of 1″ of radius in 4·39 years; of trees in groups I., II., and III., at the rate of 1″ radius in 4·31 years. Actual measurements of younger trees gave 1″ of radius in 3·03 years: so it is only reasonable to suppose that the trees grew quicker in the 14th to the 31st year than they did on the 32nd.

16. It will be seen from Mr. Duthie's table that tree No. 4 of group II. has shown but slow growth in the year of measurement.

17. In the table given below I have abstracted the actual increase or decrease from Mr. Duthie's table, only giving the numerator of the fractions which have been reduced to a common denominator, *viz.*, 8. The whole increase is $\frac{105}{8}$ or $13\frac{1}{8}$, as shown in para. 8.

Months of 1881.	Group I.			Group II.				Group III.		Total monthly increase.	Remarks.
	1	2	3	1	2	3	4	1	2		
April ...	0	0	0	0	0	1	1	0	0	2	*Correct for probability of error in measurement −4=17.
May ...	1	1	1	1	1	1	0	2	1	9	
June ...	0	0	1	1	3	1	0	0	4	10	
July ...	1	1	2	1	2	0	0	1	1	9	
August ...	3	3	1	2	1	1	0	4	3	18	*Correct for probability of error in measurement +4−2†=27.
September ...	3	2	6*	2	2	4	0	0	2	21	
October ...	2	3	−4*	3	4	4	5	5†	3	25	
November ...	2	1	2	0	1	1	0	−2*	1	6	
December ...	0	0	...	2	1	1	1	0	0	5	*Correct for probability of error in measurement +2=8.
Total ...	12	11	9	12	15	14	7	10	15	105	

18. I have not had time to work out the rainfall at Saháranpur and the temperature of the air at Roorkee, the nearest place where there is an observatory, and without more detail and data I do not think any satisfactory deductions of consequence could be made; for the present we must, I think, remain satisfied with the knowledge that the growth is pretty constant in May, June, and July, increases rapidly in August, and continues increasing till it culminates in the growth in October, when it rapidly decreases again on the coming of the cold weather.

E. WOOD, CAPTAIN,
Conservator of Forests, Oudh Circle.

SCHOOL CIRCLE REPORT.

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N.-W. PROVINCES AND OUDH.

SCHOOL CIRCLE.

ANNUAL PROGRESS REPORT
OF
FOREST ADMINISTRATION
FOR THE YEAR 1881-82.

By Major F. Bailey, R.E., Conservator of Forests.

CHAPTER I.

Summary of Administration during the year.

General.

1. *Staff of officers.*—Major Bailey officiated as Conservator in the Punjab from the end of October 1881 to the 10th May 1882, and Major vanSomeren officiated for him in charge of this Circle. Mr. O'Callaghan was transferred to the Central Circle; Mr. Fisher was transferred from Assam; Mr. Hearle joined from Burmah; Mr. Hobart-Hampden joined from England; and the staff of officers at the close of year stood thus:—

Mr. W. R. Fisher	...	Deputy Director Forest School, and Dún Division.
Mr. E. McArthur Moir	...	Tons Division.
Mr. E. Fernandez	...	Working Plan Division.
Mr. A. Smythies	...	Jaunsár Divisisn.
Dr. H. Warth	...	Instructor at Forest School.
Mr. A. F. Broun	...	Attached to Working Plan Division.
Mr. F. B. Bryant	...	Attached to Dún Division.
Mr. N. Hearle	...	Attached to Jaunsár Division.
Mr. A. G. Hobart-Hampden	...	Attached to Dún Division.
Mr. J. C. Murray	...	Attached temporarily to Forest Survey.
Mr. A. E. Lowrie	...	Saháranpur Division.

Forest School.

2. *Course of theoretical and practical instruction.*—The first regular course of theoretical instruction was held from 10th July to 15th October. The classes were attended by five probationers and seven apprentices, of whom the following is a list:—

Name.	Province.	Remarks.
	Probationers.	
Mr. A. E. Lowrie...	School Circle, North-Western Provinces.	Received the higher certificate and ceased to be students.
Babu Karuna Nidhan Mukerji ...	Ditto	
Mr. J. C. Mendes...	Bengal	Returned to Bengal after the course of instruction. Not sufficiently well qualified to remain at the school.
Babu Shama Charan Chakarbatti ...	Ditto	
Babu Chandra Kumar Chatterj. ...	Central Provinces.	
	Apprentices.	
Fazl-uddin	Punjab	Returned to the Punjab with ranger's certificate.
Daulat Ram	Ditto.	
Moti Singh	Ditto.	
Jag Mohan	Berar	Withdrawn from the school.
Nának Chand	School Circle, North-Western Provinces.	
Naim-ud-din Ahmad	Assam	Withdrawn from the school.
Kripa Nath Dey	Ditto.	

The five men against whose names there are no remarks remained as students at the school. At the close of the course of theoretical instruction the two Punjab men returned temporarily to their province for practical work, while the other three men were sent to the Saháranpur and Working Plan Divisions. Two men from British Burmah (Pegu Circle), one from Berár, and one from Pattiála, joined after the close of the course of instruction; and one apprentice was awarded a scholarship by the Conservator of this Circle. These men were all employed in the Dún and Saháranpur Divisions, or in the Working Plan Division.

The classes were also attended from 15th August to 15th September by the following officers of the superior staff, who were deputed from other provinces :—

Name.			*Province.*
MR. A. CAMPBELL	...	...	Oudh.
MR. J. C. MCDONELL	...	...	Punjab.
MR. A. M. REUTHER	...	...	Ditto.
MR. J. COPELAND	...	...	Ditto.
MR. E. MURRAY	...	...	Ditto.
MR. G. H. FOSTER	...	...	Central Provinces.

Most of the instruction was given by officers of the forest school staff, but Mr. Baden-Powell, C.S., gave a course of lectures on forest law, and Mr. Duthie, Superintendent of the Botanical Gardens at Saháranpur, conducted the instruction in botany. Mr. Brandis and Dr. Schlich were present at Dehra during the greater part of the theoretical course, and a joint report, drawn up by Mr. Brandis and Major Bailey, was submitted to Government on the 3rd October.

3. *School buildings, apparatus, collections and laboratory.*—The buildings are now in good order, but some additional doors and windows are required to let in more light. Some valuable additions have been made to the herbarium, to the arrangement of which Mr. Duthie devoted much time and attention. A collection of specimens of French woods was received through Colonel Pearson; and a collection of woods, made by the brothers Schlagentweit during their journeys in India, was sent out from England by the Secretary of State, and deposited in the museum. Mr. Smythies attempted the identification of the Schlaugentweit specimens, but the task proved an exceedingly difficult one, and owing to his departure on furlough it was not completed. Nine hundred and fifty-three books were added to the library, which now consists of 1,578 volumes. The collection of minerals now comprises 300 specimens of 75 varieties; and the geological collection, which comprises about 600 specimens, has been arranged by Dr. Warth according to the localities from which they were received. A large chemical balance for delicate quantitative analysis was presented by Mr. Brandis, and a microscope was presented by Mr. Smythies. The laboratory has been fitted up by Dr. Warth so as to accommodate six students working at qualitative analysis. Apart from the work of instruction, Dr. Warth conducted a quantitative analysis of cutch received from Burmah, and of iron ores and halloysite from Jaunsár.

4. *Meteorological observatory.*—Observations of temperature and rainfall were regularly made and recorded, and two apparatus to measure the percolation of water have been erected, but the results of the latter class of observations cannot be given at present. Arrangements are in progress to establish two corresponding observatories, one in the forest and one outside, in order to determine the effect of the forest upon temperature, dew, rainfall, and percolation; and Dr. Warth is to visit the Alipur observatory in order to study the system of observations as there conducted.

Forest Divisions.

4. *Main outlines of operations and objects chiefly kept in view in working the forest divisions.*—In the *Dehra Dún* Division departmental timber operations have not been found sufficiently remunerative, and they have practically ceased, only such trees as are required for departmental use being now felled and converted by Government agency. Although these forests do not now contain many mature trees, still there is

a large quantity of timber in them in the shape of injured and misshapen trees, the removal of which will realize a considerable revenue, and will at the same time greatly improve the young growth which is to form the next mature crop. These trees, together with such of the larger sound trees as can be spared, are now sold standing to timber merchants under written agreements, the trees in one or more blocks being previously selected and marked by a competent European officer. Upwards of 6,000 trees were sold in this way during 1881-82, and it is desired to spread the cutting of the remainder of these trees over a series of years, until the next mature crop is fit for the saw. In order to increase the revenue on minor produce, and at the same time to remove the collection of it as much as possible from the hands of subordinates, and thus to set them free for other work, nearly the whole of the open forests were farmed out on leases. During the year twelve tracts were thus leased for the collection of revenue on fallen dead timber and firewood, bamboos, and minor produce; and the sum realized was over Rs. 10,000. As a consequence of these arrangements, only Rs. 7,157, or about one-ninth of the total revenue, was collected at the chaukis, the remainder being paid in direct to the treasury or to the head-quarters office. Fifty-eight miles of new roads and paths were made, and necessary repairs of old roads were executed; the total length of departmental roads and paths being now 142 miles. Several new temporary buildings, chiefly for the accommodation of officers and establishment engaged in fire conservancy, were erected; the protection from fire of nearly 39,000 acres of forest was undertaken; and 51 acres of plantations were made. The above, with a revision of the demarcation and preparation of the record of reserves, have formed the principal work undertaken in the Dún forests during the year.

The greater part of the *Sahárunpur* Division consists of the southern slopes of the Siwálik hills, which are very thinly and unevenly stocked with trees; while the forests lying below the hills have been very much overworked, and contain only a sparse crop of small trees. Under these circumstances the Inspector-General of Forests advised that green timber should be cut as sparingly as possible, and that the trade should be diverted into the Dún Division. This has been done; but arrangements previously made with contractors had to be met, and under the old system some 13,000 pieces of timber were removed during the year. Revenue from this source will now almost cease for some time; but unless some green wood is cut, it will be difficult to meet the requirements of Roorkee, Hardwár, Jowálapur and other towns, in the way of firewood; and it is hoped that it may be found possible to remove a sufficient quantity of green timber to meet this demand without causing injury to the forests. The whole of the forests of the eastern and central ranges were let out on farming leases for the collection of revenue on firewood and charcoal, bamboos, and minor produce, the sum realized being over Rs. 9,000. Out of a total revenue of Rs. 38,000, Rs. 22,000 were paid in direct to the head-quarters office and to the treasury, while Rs. 16,000 were collected by the establishment at the chaukis. The western range will now be leased, and the chauki collections will then be further reduced. The departmental roads, of which there are 34 miles, were kept in repair; preparations for building two rest-houses were made; the protection from fire of over 36,000 acres was undertaken; and 16 acres of plantations were made. The demarcation was revised and the preparation of the record of reserves was continued.

In *Jaunsár* there is at present extremely little revenue from private sources, nearly the whole of the important transactions consisting of the supply of timber to the Public Works Department, and of fuel to the Commissariat Department at Chakráta. As a consequence of this, the revenue and expenditure are very fluctuating, being dependent chiefly on the continuous stay of the troops in the cantonments. The attention of the divisional officer is principally directed to the regeneration of the forests in the immediate vicinity of Chakráta, and to the planting up of certain blocks within the cantonments, in order that a permanent supply of timber and fuel may be available within a reasonable distance to meet all possible demands. These forests are to be protected from fire and brought as rapidly as possible into full bearing;

they must also be made thoroughly accessible by roads and paths. Under the terms of the settlement, the inhabitants of the villages near the forests are entitled to timber for their own use free of charge, and an agreement has been made with them fixing a definite annual grant which is not to be exceeded; the marking and delivery of these trees forms an important item of work every year. Twenty-four miles of new roads were made, and necessary repairs to existing roads and paths were executed; the total length of departmental roads and paths is now estimated to be 154 miles. A new rest-house was made at Mundáli, and the old buildings were maintained in repair; the protection from fire of more than 38,000 acres of forests was undertaken, and 43 acres of plantations were made. The above, with the preparation of the record of reserves, formed the principal work of the year. Rs. 3,282, or 7½ per cent. of the total revenue, was collected through the subordinate establishment.

In the *Tons* Division the principal work for many years has been the export of deodar sleepers, which have been chiefly cut in the Tehri-Garhwál leased forests and supplied to State Railways. Trees are also given to villagers free of charge, as in Jaunsár, though no special agreement as to quantity has as yet been made in the Native States. A commencement has now been made to sell standing deodar trees in remote situations, and standing trees of other kinds; and, during the year, 590 deodar trees and 319 chir (*P. longifolia*) trees were sold in this way; departmental timber works will however be maintained at Deota for instructional purposes until that forest is worked out, when it is probable that the departmental work will be transferred to Jaunsár.. An examination of the Tehri-Garhwál forests is in hand, with a view to determining whether or not any new areas should be demarcated under the lease and rules, and similar work is in progress in Bashahr. The areas which it is proposed to reserve in Raiengarh and Dádi have been finally demarcated. Several new roads were made, and existing roads were repaired, the total length of departmental roads and paths being estimated to be 78 miles. Some new out-houses were built at Deota and Lambatách; the protection from fire of over 28,000 acres of forest was undertaken; and 50 acres of plantations were made. The above, together with the preparation of the record of reserves, formed the principal work executed during the year.

6. *Formation of ranges, forests and blocks, and executive control thereof.*—The formation of ranges, forests and blocks has now been almost completed, both on the ground and on the maps, and the sub-division of the forests thus made is utilized in all work; but as the establishment is still incomplete, there being no rangers, the executive charges cannot yet be arranged as they will be eventually. In the Dún, Mr. Fisher has paid great attention to this subject, and desires to make some slight changes in the boundaries of the ranges; his proposals will be considered. In Dehra Dún the four ranges have been formed into eight foresters' charges; and here, as in other divisions, forest guards' beats have all been laid down. In the Saháranpur, Jaunsár and Tons Divisions the ranges are all held by foresters.

Area and Boundaries.

7. *Area.*—The area of reserved forests under the control of the Forest Department at the commencement and at the close of the year was :—

On 1st April, 1881.		*On 31st March*, 1882.		Increase in acres.
Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	
491,084	767	492,480	769	1,396

The increase is thus accounted for— *Acres.*

Added in Bashahr	1,430
Excluded from Saháranpur, having been erroneously demarcated ...	34
Balance	1,396

8. *Boundaries.*—When preparing the detailed description of boundaries required for the record of reserves, it was found that in the Dún and Saháranpur the boundary pillars were in many cases at too great intervals; the erection of intermediate pillars was therefore ordered and is in progress. In the Dún a one-foot trench is being dug from pillar to pillar, and a bridle path is being made along it. The cleared boundary lines will in future be only 15 feet instead of 40 feet wide as at present, the narrower line being preferred because it is hoped that eventually the branches of the trees will close overhead and thus prevent the growth of jungle. Seventy-five miles of old lines were cleared in the Dún. Some of the lines in Saháranpur require clearing, and this will be seen to next season. The Soi Toli (cantonment) block at Chakráta was demarcated with 28 numbered pillars. The pillars throughout Jaunsár Báwar are in fair order. The demarcation of the leased forests of Deota, Lambatách, Kotigádh, Surás and Bámsu was revised, with a view to the preparation of the record of boundaries required by the new Tehri-Garhwál rules, and 64 new pillars were erected. The boundaries of the Raiengarh and Dádi leased forests were also revised; pillars were erected, and these were in some cases supplemented by two-feet paths. Seven forests in Bashahr were temporarily demarcated. Block boundary pillars were set up in the Dún and at Deota. The total expenditure on these works, including repair and numbering of pillars, was Rs. 2,539.

9. *Disputed boundaries.*—The most important case of disputed boundary occurred in the Tons Division, where the Rajas of Tehri-Garhwál and Kuntal each claim a portion of ground in which there is a valuable deodar forest. The Raja of Kuntal has sold the timber to some merchants, who have felled a large number of trees, and the question now forms the subject of a correspondence between the Government of the North-Western Provinces and Oudh and that of the Punjab. Should the dispute be decided in favor of Tehri-Garhwál, the timber will become the property of the Forest Department, which holds a lease of the forests of that State. The Málkot boundary has been laid down, the Patri boundary has been finally settled; several small disputes in the Dún and Saháranpur have been decided, and in consequence of these decisions 34 acres of forest in Saháranpur had to be surrendered. The question of the boundary on the Ganges between the Central and School Circles is before Government.

Protection and Improvement.

10. *Establishment.*—The permanent establishment was the same as for the previous year, the sanctioned allotment being Rs. 11,448 for the year. The actual expenditure on temporary establishment was Rs. 8,132.

11. *Offences.*—The result of prosecutions for breaches of forest rules during 1881-82 and the preceding year is shown below :—

Year.	Convictions.		Acquittals.		Total.	
	Number of cases.	Number of persons.	Number of cases.	Number of persons.	Number of cases.	Number of persons.
1880-81	39	109	43	121	82	230
1881-82	50	94	15	49	65	143

Four additional cases were pending at the close of the year. Of the total number of cases which occurred during the year, five were on account of injury to the forest by fire, 35 were on account of unauthorized felling or appropriation of produce, eight were for grazing without permission, and the remaining 20 have been classed as "other offences." Of these latter cases, four were against forest guards for dishonest practices, six against villagers for cultivating without permission within the forest, five were against *shikáris*, and the remainder were cases of purjury, stealing, defacing marks, assaulting a guard, and occupying a building without permission. In the Dehra Dún, Saháranpur and Jaunsár Divisions 53 cases were compounded under section 67 of the Forest Act, Rs. 881 being paid in compensation; similar information is not available from the Tons Division.

12. *Communications and buildings.*—The sums expended on the construction and repair of roads, bridges, wells, and buildings were as follows, as compared with the expenditure under these heads during the preceding year :—

Year.	Roads and bridges.	Buildings.	Other works.	Total.
	Rs.	Rs.	Rs.	Rs.
1880-81	7,254	3,029	35	10,318
1881-82	7,663	16,439	524	24,626

Roads and bridges.—82 miles of new roads and paths were constructed in the Dún and Jaunsár Divisions, and several new paths were made in the Tons Division. Necessary repairs were executed throughout the Circle. The total length of roads and paths constructed and maintained by the department is now estimated to be as follows :—

In the Dún and Saháranpur.

	Miles.
Cart roads, 15 feet wide	66½
Ditto 10 feet wide...	66½
Bridle paths, 6 feet wide	41¾
Foot paths	1½
Total ...	176¼

In the Hill divisions.

	Miles.
Main roads, 4 feet wide	89
Carrying roads, 3 feet to 4 feet wide	84
Inspection paths	59
Total ...	232

These figures are liable to correction.

Buildings.—The total expenditure on buildings during the year was Rs. 16,439 ; new buildings cost Rs. 14,098, and repairs cost Rs. 2,341. The cost of completing the school buildings at Dehra was Rs. 11,110. A new rest-house, costing Rs. 1,515, was built at Mundáli in Jaunsár. Temporary buildings in the Dún, new out-houses in the Tons, and the commencement of new rest-houses in Saháranpur, cost Rs. 1,473. Exclusive of the School at Dehra, the following buildings have been constructed and are maintained by the Department for the use of officers and subordinates employed in the forest divisions :—

Description.	*For the use of*			Wells.	Total.
	Officers.	Subordinates.	Offices, stores, &c.		
Permanent	14	12	4	2	32
Semi-permanent	4	25	7	4	40
Temporary	7	42	...	...	49

13. *Fire protection.*—The results of fire protection during the last four years are given below :—

Years.	Area attempted.	Failures.	Proportion of failures to area attempted, per cent.
	Acres.	Acres.	
1878-79	74,424	9,251	12
1879-80	96,422	1,464	2
1880-81	113,639	988	1
1881-82	141,854	5,661	4

The area of which the protection was attempted was increased by 28,215 acres, and amounted to 29 per cent. of the total area of the Circle. The expenditure on the season's work was Rs. 7,593, or Rs. 56 per 1,000 acres actually protected, as compared with Rs. 57 during the previous year ; the total expenditure from the commencement of operations has been Rs. 33,162. The principal fires occurred in Bulawála and Tháno (Dehra Dún), and in the Báshla chir forest on the Tons ; the fire at Tháno was the work of incendiaries.

14. *Exclusion of cattle, sheep, and goats.*—In Dehra Dún there are no rights of pasture within the fire-protected forests, which are however, as matter of convenience, opened for the grazing of cattle from the commencement of the rains until the end of December. In Saháranpur the cattle are excluded throughout the year from the fire-protected areas, but arrangements have been made to allow the inhabitants of certain villages to water their cattle within the protected portion. In Jaunsár the area closed against flocks and herds is now 15,011 acres. In the Tons Division flocks and herds are admitted to the higher portions of certain of the closed forests during four or five months of the year.

15. *Plantaitons.*—The area covered by plantations was :—

On 1st April, 1881.	On 31st March, 1882.	+ or —
Acres. 1,230	Acres. 1,361	+ 131

But 16 acres having been struck off as a failure, and 13 acres having also been struck off an account of an error in the calculation of the area, and there being no provision for this in form No. 50, the area at the commencement of the year has been brought forward in that form as 1,201 acres. The following actual additions were made during the year, *viz.*:—

	Acres.
Dún	51
Saháranpur	16
Jaunsár	43
Tons	50
Total ...	160

The 51 acres shown in the Dún Division include 40 acres in the Landour Cantonment, for which funds were provided by the Military Department. The remaining 27 acres of plantations in the Dún and Saháranpur Divisions consist of sál, sissoo, tún, khair, and bamboos ; the 93 acres planted and sown in the hill divisions consist principally of deodar, but blue pine, spruce, oak and chestnut were also sown.

The expenditure was—

To end of 1880-81.	To end of 1881-82.
Rs. 18,298	Rs. 20,414

In form No. 50 the expenditure has been brought forward as Rs. 17,575, Rs. 329 having been struck off from the Dún plantations, and Rs. 394 from those in the Tons Division on account of failures. The expenditure during the year was Rs. 2,839, exclusive of Rs. 800 spent in the Jaunsár Division on coppicing and the Chakráta garden, and wrongly charged to plantation work.

16. *Forest gardens.*—There are three gardens—one at Kaunli near Dehra, one in the forest school compound, and one at Chakráta ; and much work was done during the year in sowing seed of both indigenous and exotic trees. The plants grown in

the Kannli garden will now be largely used to plant up the road avenues in the Dún and to grow mulberries for the sericultural operations. The garden in the school compound is chiefly used to afford specimens for the botanical lectures; but from it specimen trees of as many kinds as possible will be grown for the instruction of the students at the school. A large number of different species of *Eucalyptus* were sown in the Chakráta garden, and it seems probable that the species known as *paniculata*, *bicolor*, *Luchmunna*, *Sideroxylon*, and *diversicolor* will prove the most successful. The total expenditure on the three gardens was Rs. 2,115.

17. *Other works of improvement in the Dún and Saháranpur.*—The experiment of thinning bamboos, reported last year as made in Saháranpur, was on too small a scale to give definite results. Additional clumps have now been thinned, and clumps in Dehra Dún have been selected and fenced in with a view to a similar experiment being made there. Creeper-cutting was continued in the Gunjarban, Sakrauda, and Rasulpur blocks of the Saháranpur Division. Here also 380 sál stools were cut flush with the ground, and 250 of them threw up vigorous shoots, some being 7 feet high and 4 inches in girth, when nine months old. The care of certain public encamping-grounds in the Dún has been undertaken by Mr. Fisher, with a view to the planting of suitable trees on them.

18. *Other works of improvement in the hill divisions.*—In Jaunsár two acres of bán, rhododendron, and ayár were cut in December, with a view to determine the coppicing power of these trees. In the Tons Division (Lambatách) the smaller kail bushes were entirely cut away, and the larger trees were ringed, over about 40 acres, where the more rapidly growing kail were choking the deodar. In the Temple block of Deota 2,370 large fir trees were ringed, and 507 smaller ones were cut out where they were interfering with the growth of the deodar. The work at Deota was very carefully done under Mr. Moir's personal superintendence.

Yield and Working.

19. *Trees felled by Government agency (selection fellings).*—The number of trees felled by departmental agency and their cubic contents were as follows :—

Description.	Number of trees felled.			Cubic contents.
	4′6″ girth and over.	Below 4′6″ girth.	Total.	
Fir	422	...	422	67,595
Oak	372	...	372	27,897
Box	...	98	98	925
Deodar	1,289	...	1,289	331,298
Chir	37	...	37	
Kail	1	...	1	
Other species	42	...	42	
Total ...	2,163	98	2,261	427,715

The cubic content of the 2,163 trees of the larger class was 426,790 cubic feet, while that of 98 trees of the smaller class was 925 cubic feet. The number of trees felled during the previous year was 2,114.

In the Dún there was a reduction of 136 trees on account of the abandonment of departmental timber works; in Jaunsár there was a reduction of 880 trees, no deodar having been cut, and the oak trees cut for fuel having been of large size. In the Tons there was an increase of 1,163 trees, which is explained as follows; at the beginning of the previous year there were 542 felled trees on hand, while at the end of that year there was no balance, so that trees for the whole outturn of sleepers and for local consumption on the slide and buildings during the past year had to be cut, and in addition 500 deodar trees were cut for export during 1882-83. It may here be remarked that although the new form for selection fellings (form 58) does not provide for the record of the cubic contents of trees felled, the estimated contents have

been given in consequence of the remarks made in the Government of India Review on last year's report; but these figures must always be of extremely doubtful value. It is presumed that it is only desired to know the cubic content of *useful* timber in the trees, but this depends on the use to which the timber is to be put. Thus in the case of trees felled for fuel the small branches even are utilized, while it will be shown in a subsequent paragraph that of 11 representative deodar trees felled on the Tons for conversion into sleepers only about 40 per cent. of the wood could be used. It would appear to be sufficient to trust to the record of girths only.

20. *Outturn of timber and other produce cut and collected by Government agency.*—The outturn was as follows :—

	Number or quantity.	*Cubic feet.*
Trees and poles (thinnings) ...	38	66
Deodar logs	329	5,576
Fir "	364	7,208
Other "	44	345
Box-wood, pieces	718	925
Deodar sleepers	93,827	222,107
Other scantlings	7,710	8,506
Tors and churans	3,718	5,229
Sándan ploughs	385	602
Miscellaneous pieces	806	1,466
Total timber ...	107,939	252,102
Firewood	...	83,733 (solid)
Charcoal (maunds)	243	...
Bamboos (scores)	138	...
Honey and wax (seers) ...	12	...

In addition to the above, 85 logs of various kinds were brought to Dehra from the Dún forests for experimental purposes, but were not shown in the returns. Included in the above statement are 47,680 deodar sleepers and 328 logs purchased at Raiengarh from Messrs. Winton and Braidwood, and 281 deodar sleepers found in the Dádi forests; the remainder is the result of departmental work, together with drift and confiscated wood and other produce collected by Government agency.

21. *Timber and other produce received in sale depôts.*—There are no sale depôts in the Dún and Saháranpur Divisions. The following amounts of timber and other produce were brought to the Chakráta and Delhi depôts from the hill divisions :—

	Number or quantity.	*Cubic feet.*
Deodar karis	130	378
Rai scantlings	5,113	4,569
Sál poles	1	1
Deodar sleepers	50,744	68,508
" beams	15	75
Total timber ...	56,003	73,531
Firewood	...	136,365 (solid)
Charcoal (maunds)	42	...

22. *Sales of timber and other produce cut and collected by Government agency.*—The following amount of timber and other produce was sold from the depôts of the hill divisions :—

	Number or quantity.	*Cubic feet.*
Deodar sleepers	47,972	64,340
" beams and other scantlings	767	1,477
Fir and pine scantlings ...	2,028	1,509
Sál poles	1	1
Total timber ...	50,768	67,327
Firewood	...	141,148 (solid)
Charcoal (maunds)	42	...

and the following amount was sold locally from the four divisions :—

	Number or quantity.	Cubic feet.
Trees and poles	38	66
Logs (various)	45	345
Deodar sleepers and beams ...	655	1,333
Tors and churans	3,718	5,229
Sándan ploughs	385	602
Sál sleepers and karis ...	9	10
Miscellaneous pieces	818	1,466
Total timber ...	5,668	9,051
Firewood	...	3,400 (solid)
Charcoal (maunds) ...	494	...
Bamboos (scores)	138	...
Honey and wax (seers) ...	12	...

The total revenue derived from the above sales of produce collected by Government agency was as follows :—

	Rs.
Timber	95,443
Firewood	33,462
Bamboos	46
Drift and confiscated wood (part of head III.) ...	3,739
Total ...	1,32,690

23. *Account of timber and other produce.*—The following is an abstract of the account of timber and other produce cut or collected by Government agency and brought to sale depôts or sold locally during the year :—

Description.	Balance in hand.	Received during the year.			Disposed of during the year.				Balance.
		Brought to depôts.	Received from forests and sold locally.	Total.	Removed by purchasers from depôts	Sold locally.	Lost or used by Department, &c.	Total.	Balance.
Timber of all kinds (c. ft.)	19,930	73,531	9,051	82,582	67,327	9,051	4,880	81,258	21,254
Firewood (c. ft. solid),	22 949	136,365	3,400	139,765	141,148	3,400	600	1,45,148	17,566
Charcoal (maunds) ..	380	42	494	536	42	494	380	916	...
Bamboos (scores) ...	...	...	138	138	...	138	...	138	...
Honey and wax (seers) ...	...	...	12	12	...	12	...	12	...

24. *Timber and other produce removed by consumers or purchasers.*—The following is an account of the timber and other produce cut, collected, and removed from the forests by consumers or purchasers :—

Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.
		Rs.	Rs.
Timber (cubic feet)	55,810	53,980	51,219
Firewood	...	8,054	8,054
Charcoal	...	467	467
Bamboos (scores)	35,062	9,007	9,007
Grazing	84,454	25,132	25,132
Minor produce	...	11,684	11,476
Total revenue under head II. ...	...	1,08,324	1,05,355

and to this may be added Rs. 1,386 on account of drift and confiscated wood. The number or quantity given above does not represent the whole of the sales corresponding to the revenue, because the amounts exported under farming leases cannot at present be given, and there are other instances in which the quantities cannot be stated.

The above statement does not include free grants of produce which will be treated of later on.

25. *Total value of timber and other produce sold.*—The total value of timber and other produce sold from the Government forests was then—

Head.	Rs.	Rs.
I.—Removed by Government agency ...	1,28,951	
III.—(Part of) drift wood	3,739	
		1,32,690
II.—Removed by consumers or purchasers ...	1,05,355	
III.—(Part of) drift wood	1,386	
		1,06,741
Total of heads I., II., and III.		2,39,431

26. *Farming leases.*—The system of granting farming leases for the collection of revenue, principally on dead timber, firewood, bamboos and minor produce, was continued, and found generally to lead to satisfactory results. Forty-one leases were given and the revenue received was as follows :—

	Rs.
Dead standing timber	3,678
Firewood and charcoal	4,691
Bamboos	6,415
Minor produce	6,653
Grazing	140
Drift wood	781
Total (included under heads II. and III.) ...	22,358

Of this sum only Rs. 740 were received in the hill divisions. The leases frequently include several kinds of produce, and the revenue is then apportioned to the various heads by guesswork. It has not as yet been found possible to estimate the *quantities* of produce exported under the leases.

27. *Sales to Public Departments.*—Sales to Public Departments took place only in the hill divisions, and consisted of supplies of timber and firewood to the Executive Engineer and Executive Commissariat Officer at Chakráta, and of sleepers to the State Railways. The balance of the year's transactions shows a sum of Rs. 16,266 in favor of the Department.

The following statement shows the results of these transactions for the last three years :—

Amount of revenue.				*Cost to Forest Department.*			Surplus.
Year.	Due.	Received.	Outstanding.	Timber expenses under A.I.	Quota of other charges.	Total.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	2,05,392	2,05,392	...	82,455	34,103	1,16,558	88,834
1880-81 ...	1,11,003	1,11,003	...	79,873	8,098	87,971	23,032
1881-82 ...	1,21,540	1,21,202	338	94,834	10,440	1,05,274	16,266
Average ...	1,45,978	1,45,866	112	85,721	17,547	1,03,268	42,710

28. *Export of boxwood.*— During the winter of 1880-81, 456 cubic feet of boxwood were sent from the Jaunsár Division to Messrs. Churchill and Sim of London for sale, the total cost including carriage to London being Rs. 1,937. The wood on arrival in London weighed 12 tons 17 cwt. 2 qrs. 7 lb. and was sold at £ 30 per ton. After deducting discount and agency charges, the sum of Rs. 4,269 was credited as revenue, and the profit thus amounted to Rs. 5-11-0 per cubic foot. A further consignment of 29 tons was sent in March 1882, but the result is not yet known.

29. *Free grants to villagers.*—A considerable quantity of timber and other produce was granted to the inhabitants of Jaunsár Báwar and to the people living in the Native States near the leased forests. Except in the case of deodar and cypress, the people in Jaunsár Báwar did not require more than one-half of the quantity they are entitled to under the agreement made with them. Agreements with the residents in Native States will be made as soon as possible.

30. *Iron manufacture.*—The small experiment made in the Jaunsár Division was not a success, 8 maunds 25 seers of iron having been made at a cost of Rs. 12 per maund, and three maunds only having been sold at the rate of Rs. 4 per maund. But the experiment must be tried on a larger scale, and Dr. Warth has been requested to give his attention to the matter; he visited both the hill divisions with a view to investigate their resources in iron.

31. *Wire tramway at Deota.*—Dr. Warth also endeavoured to erect a wire tramway for the transport of sleepers from the Deota forest to the head of the slide; but in this, the first attempt, he was not completely successful. A further trial will be made.

32. *Fuel experiments.*—The experiments to determine the relation between the cubic contents of solid and stacked fuel, and also the loss in weight undergone by fuel stacked in the open and under cover, are being continued. The relation between stacked and solid fuel is found to be very nearly as 150 to 100. A stack of fir fuel weighing 1,642 maunds and measuring 4,800 cubic feet (stacked) was found, after one year and eight months under cover, to have lost 22 per cent. in weight, and 3½ per cent. in volume.

33. *Scourage of sleepers.*—In continuation of the experiment reported last year 100 sleepers, each $6\frac{1}{4}' \times 8\frac{1}{4}'' \times 4\frac{1}{4}''$ were marked before being launched at Thadiár. Only 18 of them were measured at Delhi, and the conclusion arrived at last year, *viz.*, that to land a sleeper $6' \times 8'' \times 4''$ at Delhi, it is sufficient to cut it of the size above stated, was confirmed.

34. *Floating operations on the Tons and Jumna.*—During the winter Mr. Moir submitted a report on the proposal to bring the rules under section No. 41 of the Forest Act into force on the Tons and Jumna rivers. The property marks of private traders were registered, launching passes were issued, depôts fixed upon, and an establishment sanctioned; but as the whole question is under reconsideration by Government, it is not considered necessary to give further details in the present report. A question which arose as to the rights of the Maharája of Sirmur on the river is also under consideration by Government.

35. *Protection of bamboos.*—As reported last year, the principal forests of the Saháranpur Division from which bamboos are exported have been divided into 16 blocks; and to prevent over-cutting, and at the same time to avoid inconvenience to purchasers, arrangements have been made by which each block is only open every third year, every third block in succession being open during the same year. Similar arrangements have not yet been made in Dehra Dún, but this will now be done.

Financial Results.

36. *Receipts, charges and surplus.*—The following statement, in the form adopted by the Government of India in the Review on last annual report, gives the receipts and expenditure so distributed as to show the results of the transactions under the three main heads during the last three years :—

	1879-80.		1880-81.		1881-82.		Average of three years.			
	Receipts.	Charges.	Receipts.	Charges.	Receipts.	Charges.	Receipts.	Charges.	Surplus.	Deficit.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—Departmental timber operations.	2,16,324	1,17,578	1,22,123	1,02,887	1,28,951	2,76,559	1,55,799	1,65,675	...	9,876
II.—Other revenue.	71,118	26,329	80,519	26,485	1,21,960	33,809	91,199	28,874	62,325	...
III.—Formation, protection and improvement of forests.	...	94,906	...	70,729	...	76,445	...	80,693	...	80,693
Total ...	2,87,442	2,38,813	2,02,642	2,00,101	2,50,911	3,86,813	2,46,998	2,75,242	...	28,244

In the above statement receipts under revenue head I and expenditure under A. I. form the basis of the entries under "I.—Departmental timber operations"; while receipts under the other revenue heads and charges under A. II. and A. III. form the basis of the entries under "II.—Other revenue." Charges under A. V. (Rent of leased forests), A. VII. (Communications and Buildings) and A. VIII. (Demarcation, improvement and extension), form the basis of "III.—Formation, protection and improvement." Charges under A. VI. and A IX., and charges on account of "B., Establishment," are apportioned under the three heads in each division according to the nature of the work done and head under which the revenue has been collected. But the charges under A. VII. in the Direction Division have been divided between heads I. and III.

The deficit on the year was Rs. 1,35,902 as compared with a surplus of Rs. 2,541 during the previous year.

REVENUE.—The revenue exceeded that of the previous year by Rs. 48,269, which amount is made up as follows :—

Departmental work.—The revenue on firewood and charcoal was increased by Rs. 11,947, owing to the presence of a regiment at Chakráta throughout the year, and bamboos yielded Rs. 46. The revenue on timber was decreased by Rs. 5,165, chiefly owing to the cessation of departmental timber works in Dehra Dún.

Removed by purchasers.—The revenue on timber was increased by Rs. 17,695, due to the sale of standing trees in the Dehra Dún and Tons Divisions, and to the unusual amount of house-building materials removed by the people in the Saháranpur district. Firewood produced an additional Rs. 1,070, which was realized in the Saháranpur Division. The revenue on bamboos was reduced by Rs. 1,196, due to decreased sales in Dehra Dún. The increase on grazing dues amounted to Rs. 6,655, of which a large amount consisted of arrears collected in the Saháranpur Division. Minor produce shows an increase of Rs. 2,302, chiefly realized in the Dún and Saháranpur, and due to the extended system of leasing.

Drift and confiscated wood realized an additional sum of Rs. 3,948.

Revenue from forests not managed by Government.—The river dues collected on the Jumna amounted to Rs. 5,521.

Miscellaneous.—The increase was Rs. 5,446, chiefly due to the sale of boxwood in London.

EXPENDITURE.—The expenditure exceeded that of the previous year by Rs. 1,86,712, which is accounted for as follows :—

Departmental work.—The expenditure on timber was increased by Rs. 1,43,441, which is mainly due to the purchase of Messrs. Winton and Braidwood's timber at Raiengarh. That on firewood was increased by Rs. 3,805 on account of the improved demand at Chakráta as explained above. There was an expenditure of Rs. 145 on bamboos.

Removed by purchasers and drift and confiscated wood.—The increased expenditure under these heads amounted to Rs. 1,099.

Stock.—The increased expenditure on stock amounted to Rs. 5,218, which was chiefly incurred in the Direction Division on account of laboratory chemicals, apparatus, and furniture for the school building.

Communications and buildings.—The total increase was Rs. 14,309, of which Rs. 899 were on account of roads and "other works," and Rs. 13,410 were incurred on buildings, the chief item being the alteration and completion of the Forest School.

Demarcation, improvement, and extension.—An additional sum of Rs. 2,192 was expended on demarcation, chiefly in the Dún Division, where the preparation of the record of reserves showed that additional work was necessary ; 160 additional acres of plantations cost Rs. 3,015 ; and the area placed under protection from fire was increased by 28,215 acres at an increased cost of Rs. 2,151. Differences in other items show a reduced expenditure of Rs. 466.

Miscellaneous.—The expenditure was increased by Rs. 8,082, which was chiefly on account of the export of boxwood and of the purchase of books, periodicals, and herbarium and other collections at the school.

Establishments.—The expenditure on salaries was increased by Rs. 3,634. Additional officers were attached to the Circle, while there was a reduction on account of the charges for probationers and for the pay of the Conservator. The expenditure on travelling allowance was reduced by Rs. 657, and that on contingencies was increased by Rs. 744.

Speaking generally, it may be said that there has been an increase of revenue on all items except timber cut by departmental agency and bamboos ; the principal increases being under the heads of firewood cut to supply the Chakráta cantonment, timber removed by purchasers, grazing dues, river dues and boxwood ; while the large increase of expenditure is mainly due to the settlement of Messrs. Winton and Braidwood's account, the completion of the school buildings, supply of furniture, apparatus and collections, to the export of boxwood, and pay of superior officers ; large additional sums having also been spent on demarcation, improvement and extension. The large deficit is due to the fact that the bulk of the sleepers purchased from Messrs. Winton and Braidwood is as yet unsold. The expenditure in the Direction Division of this Circle, which includes all expenses connected with the Central Forest School, will always form a heavy charge against the revenue derivable from the forest divisions, and render it difficult to show a large surplus; but if the sleepers are all sold during 1882-83 the present deficit should be more than covered.

37. *Other financial statements.*—In obedience to instructions received from Government the subjoined statements are also given.

The following table compares the receipts, expenditure and deficit of the year with the receipts, expenditure and surplus of the previous year :—

Receipts.		Expenditure.		Surplus, 1880-81.	Deficit, 1881-82.
1880 81.	1881-82.	1880-81.	1881-82.		
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,02,642	2,50,911	2,00,101	3,86,813	2,541	1,35,902

The expenditure was 54 per cent. more than the revenue.

The receipts were derived from the following sources :—

	Timber and other produce removed from the forests by Government agency.	Timber and other produce removed from the forests by consumers or purchasers.	Confiscated, drift and waif wood.	Revenue from forests not managed by Government.	Miscellaneous.	Total.
	Rs.	Rs.	Rs	Rs.	Rs.	Rs.
1880-81	1,22,124	78,831	1,177	...	510	2,02,642
1881-82	1,28,951	1,05,355	5,125	5,521	5,959	2,50,911

As compared with the preceding year, the revenue yielded by each division was as follows :—

Division.	1880-81.	1881-82.	+ or −
	Rs.	Rs.	Rs.
Dehra Dún	54,948	64,068	+ 9,120
Saháranpur	27,080	38,236	+11,156
Jaunsár	30,570	44,682	+14,112
Tons	90,030	1,03,750	+13,720
Direction	14	175	+ 161
Total ...	2,02,642	2,50,911	+48,269

The following tables show the expenditure under the two main heads (A.) Conservancy and works, and (B.) Establishments :—

A.

Year.	I. Timber and other produce removed from the forests by Government agency.	II. Timber and other produce removed from the forests by consumers or purchasers.	III. Confiscated, drift and waif wood.	IV. Rent of leased forests.	VI. Live stock, stores, &c.	VII Communications and buildings.	VIII. Demarcation, improvement, &c.	IX. Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.
1880-81	80,196	4,812	11	8,501	4,425	10,318	8,835	2,376	1,19,474
1881-82	2,27,587	5,703	220	8,501	9,644	24,626	15,726	10,458	3,02,465

B.

Year.	I. Salaries.	II. Travelling allowances.	III. Contingencies.	Total.
	Rs.	Rs.	Rs.	Rs.
1880-81	65,969	11,580	3,278	80 627
1881-82	69,405	10,921	4,022	84,348

The results of work by departmental agency are as follows :—

1879-80.			1880-81.			1881-82.		
Receipts.	Expenditure.	Percentage of receipts expended.	Receipts.	Expenditure.	Percentage of receipts expended.	Receipts.	Expenditure.	Percentage of receipts expended.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,16,324	1,17,579	54·3	1,22,124	1,02,887	84·2	1,28,951	2,76,559	214·5

The large percentage of expenditure is due to the non-sale of Messrs. Winton and Braidwood's sleepers. There is not much demand at present for sleepers exported from the Government forests ; the Rajputána Railway is said to have a large stock of Norwegian sleepers, and the merchants have also large stocks of Himalayan sleepers, so that the prices realized last year are low, being never more than Rs. 4 for 1st class broad-gauge sleepers and Rs. 1-14 for 1st class metre-gauge sleepers. Mr. Moir however hopes that there may yet be a brisk demand for deodar sleepers; and he gives figures showing that, exclusive of charges on account of buildings, roads, slide and proportion of general charges, the actual profit on each of his metre-gauge sleepers was 6 annas and 4 pies.

The actual results of the year's work are given below and compared with the results of 1880-81.

	1880-81.	1881-82.
	Rs.	Rs.
Deficit	8,847	1,18,686

The details for the year under report are obtained as follows :—

Particulars.	Amount.
	Rs.
Receipts of the department during 1881-82	2,50,911
Expenditure ditto ditto	3,86,813
Deficit ...	1,35,902
Value of timber at the commencement of the year	23,165
Ditto at the close of the year	1,20,964
Difference for the year to be deducted ...	97,799
Balance ...	38,103
Value of live and dead stock at commencement of the year	68,649
Ditto ditto at close of the year	80,539
Balance to be deducted ...	11,890
	26,213

Add—	
Amount of revenue realized on account of previous periods,	*Nil.*
Balance	26,213
Deduct—	
Outstandings of the year, minus bad debts	21,668
	4,545
Deduct—	
Amount disbursed on account of previous periods ...	*Nil.*
	4,545
Add—	
Amount due on transactions of the year but not yet paid ...	*Nil.*
	4,545
Add—	
Outstanding at commencement of the year	1,14,141
Balance showing actual deficit of the year	1,18,686

The above statement is given in conformity with specific instructions; but the Conservator considers that it is misleading, because it is partly compiled from figures which do not represent final payments (outstandings on account of advances to contractors and disbursers), and which must appear twice over in the statement for different years, each time that they appear causing a misrepresentation of facts. For example, in the present statement the sum of Rs. 90,010, advanced to Messrs. Winton and Brajdwood, appears twice against the year ; once in the cash expenditure (part of Rs. 3,86,813), and once among the outstandings at the commencement of the year (part of Rs. 1,14,141), and the deficit on the year's transactions is therefore incorrect by this amount. It is true that in the year when the advance was made (1879-80) credit was taken for this sum as a part of the "outstandings of the year" (*i. e.*, at the close of the year) and *that its entry then had precisely the same effect on the statement relating to that year as though the amount had been received as cash revenue*; and that if all the statements for a series of years be taken together, errors from this source will be eliminated ; this only goes to show the inutility of such statements as regards individual years. But even if such items were omitted from the statement, it would still be open to the objection that it is compiled in part from figures that are so very conjectural (value of timber, stock, buildings, tools, &c.) that they are liable to give most misleading results. For example, forest buildings frequently have no market value and are simply works of improvements or accommodation in the same category as roads and bridges, and estimates of the value of timber stocks are necessarily liable to be very wide of the mark. It is no doubt very useful to keep, as we do, a record of the estimated value of our stock, but such figures cannot be combined with actual receipts and expenditure in order to show the results of a particular year. If such a statement must be given at all, then the Conservator ventures to think that it might with advantage be given in the condensed form adopted by him in his report for 1879-80, which gives the same information in less than one-half of the space. But he thinks that the only figures on which reliance can be placed are the actual cash receipts and expenditure for a series of years, in considering which outstandings, differences in value of stock, &c., may be practically neglected. These remarks are made in conformity with orders given to the Conservator to explain why he considers the statement last given to be misleading. He ventures to take this opportunity of suggesting that if the statement given in para. 36 be given for a number of years and full explanation of the figures of the year be afforded, no other financial statements will be found necessary, and that all those now given in this paragraph may well be omitted. He also ventures respectfully to suggest that the form adopted by him for the financial statements of the forest divisions in Chapter II. of this report

has some advantages over that given in para. 36, in that the surplus or deficit under each main head is shown in it, and also that in it the exhibition of the results of a number of years can be more conveniently effected. The latter is a great advantage.

38. *Outstandings and liabilities on account of contractors and disbursers.*—At the commencement of the year the outstandings were Rs. 1,01,697, while at the close of the year they were only Rs. 11,919. The principal transaction of the year was the adjustment of Messrs. Winton and Braidwood's account of Rs. 90,010. The amount shown as outstanding balance has been advanced in comparatively small sums for various works.

39. *Outstandings on account of revenue.*—At the commencement of the year the outstandings were Rs. 12,444, while at the close of the year they were reduced to Rs. 9,749. Of this sum Rs. 3,613 were due from public departments.

40. *Stock.*—The following statement shows the value of stock at the commencement and at the close of the year:—

Description of stock.	*On hand at commencement of the year*		*On hand at close of the year.*		*Difference in value.*	
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.
		Rs.		Rs.	Rs.	Rs.
Timber of all kinds (pieces) ...	10,654	18,117	68,711	1,17,294	99,177	...
Firewood (cubic feet)	22,949	4,888	17,566	3,670	...	1,218
Charcoal (maunds)	380	160	..	...	...	160
Total of timber and other produce at sale depôt.	...	23,165	...	1,20,964	97,799	...
Other dead stock	4,602	61,849	5,862	73,739	11,890	...
Elephants	3	6,800	3	6,800	...	...
Total of live and dead stock ...	4,605	68,649	5,865	80,539	11,890	...
GRAND TOTAL ... 1881-82 ...	...	91,814	...	2,01,503	1,09,689	...
GRAND TOTAL ... 1880-81 ...	...	1,11,097	...	91,814	...	19,283

The increased value is mainly due to the purchase of Messrs. Winton and Braidwood's sleepers.

CHAPTER II.

Reserved Forests.

DEHRA DUN DIVISION.

Area and Boundaries.

41. *Area.*—There has been no change during the year.

42. *Boundaries.*—During the course of the preparation of the register of boundaries and boundary marks, which forms a part of the record of reserves, it was found that in some cases the boundary marks were too far apart, and not in the most suitable places; also that the present 40 feet cleared lines are not very suitable for the demarcation of the outer boundary; and it was therefore determined to erect intermediate pillars where necessary, to repair and number the pillars throughout each range, and to dig a small trench, one foot wide and one foot deep, from pillar to pillar round the entire boundary of the Government forests. Following the trench is to be a bridle-path six feet wide; this will always be kept clear, and will serve to further mark the boundary and for use

as a patrolling path. The total width of the cleared boundary line will in future be 15 feet only, and it is expected that the branches of the trees on either side of this line will eventually close up over head and prevent the growth of jungle on it. The new pillars consist of boulders surrounding a stout 10 ft. post of sál heart-wood, to which block-tin plates, painted black and bearing white numbers, are attached. The pillars are of two sizes—the larger kind, which is used at angles of the boundary, is eight feet in diameter and four feet high; while the smaller kind, which is used at intermediate points, or at points where the old unnumbered pillars exist, is six feet in diameter and three feet high. Pillars to indicate the block boundaries have also been erected, and they bear the names of the blocks painted on sheet iron plates. The above work has made good progress, and will, it is hoped, be completed for the whole division during next working season. Seventy-five miles of old boundary lines have been cleared. The expenditure on demarcation has been as follows:—

	Rs.
396 new boundary pillars	534
800 tin plates for do.	100
46 old boundary pillars repaired	48
70 block pillars	52
36 miles of boundary trench and bridle path ...	446
Clearing 75 miles of old boundary lines	750
Total ...	1,930

43. *Disputed boundaries.*—The questions in dispute regarding the Málkot boundaries have been settled; and disputes which arose at Algoha, Barkot, and Assarori have also been settled. A question regarding the boundary between the Dehra Dún Division and the Ganges Division of the Central Circle has been referred for the orders of Government.

Protection and Improvement.

44. *Establishment.*—The sanction for the permanent establishment was the same as for the previous year, *viz.*, Rs. 268 per mensem. This was supplemented by a temporary transfer of Rs. 50 per mensem from the permanent allotment reserved in the Direction Division, and by a temporary establishment costing on an average about Rs. 62 per mensem.

45. *Offences.*—One case pending at the close of the previous year was accidentally omitted from the return of that year. During the year under report there were nine new cases, of which three were for unauthorized felling or appropriation of produce, and six were for "other offences." Convictions were obtained in seven cases involving the same number of persons, and in three cases the 12 persons involved were acquitted. Of the three first-named cases, Nathe Khán was prosecuted for having felled a number of sál poles and removed them with the dead wood he had purchased; he was convicted and fined Rs. 100, and his timber stacks, which were afterwards sold for Rs. 3,123, were confiscated; but owing to some legal informalities the order for the confiscation of wood has been quashed by the High Court. A number of Jowálapur men were charged with stealing tún and sissu logs, but the evidence being contradictory, they were acquitted. Devi Dás was prosecuted for felling trees on the Jogiwála encamping-ground, along with trees which his employers had purchased on the surrounding land; this case was dismissed, as it did not appear to the Magistrate that the exclusion of the trees on the encamping-ground had been sufficiently explained at the time of sale. The six "other offences" were as follows:—One forest guard was convicted of fraudulent falsification of an official document, another for extortion, a third for giving a fictitious receipt, and a fourth for illegally detaining a grazing pass; all the men received sentences of imprisonment. Of the remaining two cases one was for perjury and one for stealing. Eleven offences were compounded under section 67 of the Forest Act; 10 of these were for unauthorized appropriation of produce, and one was a case of grazing without permission; the amount realized was Rs. 690.

46. *Roads.*—The following abstract shows the expenditure on roads :—

Name of road.	*Expenditure.* Rs.
Háthiwála	760
Kánsrau pass	33
Kánsrau and Jabrawála	185
Mádhowála	125
Tháno and Lachiwála	175
Láldháng and Khajnaor	172
Motronwála	103
The wall's line	338
Export roads, Bulawála	21
Amsot	27
Roads in Bulawála and Balindawála	83
Total ...	2,022

This sum appears in the accounts of the year, and a further sum of Rs. 582 was paid in 1882-83 ; the money was spent in widening and improving existing roads, and in constructing 58 miles of new roads and paths. The stumps of trees are extracted by cutting the roots below the surface of the ground, when the stumps are pulled out by the falling tree ; this work cannot be usefully carried on much after the 1st April, on account of the hardness of the soil. The following abstract shows the roads in this division which have been constructed and are maintained by the Forest Department :

	Miles.
Cart roads, 15 feet wide	63
„ 10 „	38¼
Bridle-paths, 6 „	40¾
Total ...	142

It is intended that all cart roads shall eventually be 15 feet wide, well raised in the centre, and with ditches on both sides.

47. *Buildings.*—The expenditure on buildings was as follows :—

Name of building.	*Expenditure.* Rs.
Repair of forester's hut at Sahanspur	190
Repair of rest-house and elephant shed at Karwapáni ...	110
Repair of rest-house at Jhabrawála	34
New temporary buildings at Kánsrau	315
„ „ Parduni	40
„ „ Tháno	156
„ „ Bulawála	20
New forester's hut at Algoha	53
Repair of revenue chaukis	110
Temporary establishment and miscellaneous	151
Total ...	1,179

A further sum of Rs. 690 appears in the accounts of 1882-83. The forester's hut at Sahanspur now contains a room and a bath-room which can be used by the Divisional Officer, and the Karwapáni and Jhabrawála rest-houses and the elephant shed have now been put into thorough repair. The Phandawála temporary rest-house was much damaged by white-ants, and will not be repaired, as the new hut, which will be erected at Rámgarh, renders its maintenance unnecessary. The temporary buildings at Kánsrau, Parduni, Tháno, and Bulawála are principally required to shelter the officers and subordinates engaged in protecting the forests from fire ; they are as a rule constructed with stout posts of súl heart-wood and grass walls. The following

abstract shows the buildings of all kinds that are maintained by the Forest Department in this division :—

Description.	For the use of			Wells.	Total.
	Officers.	Subordinates.	Offices, stores, &c.		
Permanent	1	6	...	...	7
Semi-permanent	2	10	2	...	20
Temporary	7	21	...	...	28

48. *Fire conservancy.*—The area of which the protection was attempted amounted this year to 38,942 acres, being an increase of 11,278 acres on the figures of last year. The increase is made up as follows :—

	Acres.
Part of the Bahera block	8,038
The strip of hilly ground south of the Bulawála block, and between it and the watershed of the Siwáliks ...	3,240
Total ...	11,278

The latter strip of ground lies between the fire-protected area in the Saháranpur Division, known as the Rátmau basin, and the Bulawála block. The area under fire conservancy now amounts to more than one-fifth of the whole division, but it is to be regretted that 3,856 acres, or 10 per cent. of the area of which the protection was attempted, were burnt. The areas burnt were as follows :—

	Acres.
Nichla Song block	203
Tháno	1,946
Bulawála	1,707
Total ...	3,856

In the first and third cases the fires were due to the carelessness of the men engaged in burning the lines. The large fire in Bulawála is much to be regretted ; it is believed that some pieces of wood were left smouldering on the fire lines, and that by means of these the fire was communicated to the forest. The fire was perceived at noon on the 1st May, and in spite of the strenuous exertions of Mr. Hobart-Hampden and his assistants, compartments 3, 5, 6, 7 and two-thirds of compartment 8 were burnt. None of these form part of the area which was heavily thinned previously to 1879. The change in the system of fire lines recommended by Mr. Brandis has not yet been introduced, and the system of former years was followed, except that, as a precautionary measure, the grass lands on the borders of the forest were burnt early in the season. Mr. Fisher thinks that the attempt to burn many interior lines is attended with great danger, owing to the fact that they will not burn readily until there is a great risk of the neighbouring forest catching fire ; the question will be fully considered before next season. Mr. Fisher also suggests that the temporary fire establishment should be placed under the immediate charge of the forester, instead of working independently as hitherto, and that a system of deferred pay should be tried ; this will be tried next season. Mr. Scott made charcoal in compartments 18 and 20 of Bulawála until the end of March, but he burnt fire lines round his kilns, and no damage to the forest resulted from his work. There is little doubt that the destructive fire which occurred at Tháno was the work of incendiaries, as it originated simultaneously in several places, and did not cross any of the fire lines ; a reward of Rs. 50 has been offered for information which will lead to the conviction of the offenders. The preservation of this forest from fire has always been attended with much difficulty, and it was entirely burnt down as lately as 1879. A formal agreement was however, made this year with the Tháno vil-

lagers, to the effect that if they would cut fire lines round and burn the Palássi Tappar (a grasscovered plain in the southern portion of the Théno protected area) and turn out a gang of 50 men in case of fire in the preserved forest, they would be permitted to graze their cattle over the burnt tract; they cut the fire lines and burnt the grass in Mr. Fisher's presence in the month of February, but on the occurrence of the fire in the preserved forest they did not render much assistance. There is I believe no doubt that their grazing grounds are somewhat restricted, and their case will be fully considered before next season. The total expenditure during the year (to 15th July) has been Rs. 4,613, or Rs. 131 per 1,000 acres for the area actually protected. The figures for the previous year were Rs. 117, and for the year before Rs. 104 per 1,000 acres. Thirty-six new notice-boards were set up during the year.

49. *Exclusion of cattle.*—There are no rights of pasture within the fire-protected forests, which are however all, as a matter of convenience, opened for the grazing of cattle from the commencement of the rains to the end of December. A special arrangement was made during the past year, as above described, regarding the Palássi Tappar.

50. *Plantations.*—The small area of five acres reported last year turned out a complete failure, and it has been struck out of the returns. An experimental plantation was commenced this year at Phandawála, and was sown and planted with sál, tún, khair and sissu. The area is 11 acres, and the cost was Rs. 412.

Sál.—The plantation consists of six acres, of which four acres were sown in lines 7½ feet apart, the seed being placed in patches three feet apart in the lines, the ends of which were marked by heaps of stones; the total number of patches was 4,769, or about 1,200 to the acre, and the cost was Rs. 27 per acre; five seeds were sown close to the surface in each patch, and they nearly all germinated within a week. The remaining two acres were planted up with seedlings from one to three years old; 2,553 seedlings were thus planted at a cost of Rs. 94, or about Rs. 47 per acre. Twenty-eight nursery beds 20′ × 4′ were prepared, and sown with seeds six inches apart, at a cost of Rs. 56; the nurseries were protected from frost by grass *tatties*, which were removed in the day-time, and the seedlings in the plantation were protected by hoods or cowls of dry grass placed over them; plants not sufficiently protected in this way were killed by the frost. Sundry charges amounting to Rs. 14 brought the expenditure on this work up to Rs. 274.

Tún.—A small area was sown with tún seed in lines 15 feet apart; the seed was sown in 77 patches, it has germinated freely and has not suffered from frost. Four nursery beds 20′ × 4′ were made, the total cost being Rs. 34.

Khair and sissu.—An area of four acres was sown with khair and sissu in alternate continuous lines 7½ feet apart. Eight nursery beds 20′ × 4′ were prepared, and seven of them were protected by *tatties* from the frost; but the eighth bed, which was unprotected, is said to look better than the others, and it is thought that khair and sissu will not require this protection in future. The nurseries and some of the lines were watered in November and December, but the watered plants do not look better than the others. The khair seedlings were much damaged by deer, and some of the sissu plants were destroyed by white-ants, but the khair plants have revived, and on the whole the plantation may be considered a success. The cost was Rs. 103, or Rs. 25 per acre.

51. *Forest gardens.*—The garden at Kaunli was kept up, and two malis entertained at a cost of Rs. 120. About 3,000 mulberry plants were given away; many others plants have been taken to the school compound, and some chestnuts were sent to Landour. Three species of *Eucalyptus*, *viz.*, *E. goniocalyx*, *E. rostrata*, and *E. siderophloia*, received in 1880 from Saháranpur, have done well. The *Sterculia rupestris*, *S. tricosophon*, and mahogany have also grown satisfactorily, but several of the Italian olives have died.

Seeds of the following kinds were sown :—

Dalbergia latifolia. *Pinus longifolia.* *Sál.* *Acacia pyrennetica.* *A. melanoxylon.*	These have germinated freely and are doing well.
Pterocarpus Marsupium (Bija sál). *Boswellia thurifera (Saler.)* *Hardwickia binata (Anjan.)*	Received from the Central Provinces; germinated freely, but suffered slightly from frost.
Carob	Germinated freely, but rotted away in the rains.
Broussonetia papyrifera. *Pinus Kasya.*	Have not yet germinated.

The expenditure was Rs. 213.

It is proposed to use the garden in future to grow trees for the Dehra roads, and mulberries for the sericultural operations, funds being found by the Superintendent of the Dún.

52. *Experimental cutting of bamboos.*—Some clumps of bamboos have been selected for experimental thinning, and they have been fenced in. The question of establishing a rotation for the cutting of bamboos for sale is under consideration.

53. *Landour plantation.*—The supervision of the Landour plantation was made over to the Dehra Dún Division from the Jaunsár Division. The following seeds were sown, *viz.*, *Pinus longifolia*, *Cupressus torulosa*, 20 seers of *Pinus excelsa*, one maund of deodar and two seers of *Quercus serrata*, from Assam. The following plants were put out, and are reported to be doing well, *viz.*, 500 deodar, 502 Italian chestnuts, 10 *Quercus semecarpifolia*, 100 mulberry, 2 *Eucalyptus rostrata* and 2 *E. goniocalyx*. A fire line was burnt round the plantation, which was surveyed under the superintendence of Mr. W. H. Reynolds, Deputy Superintendent Forest Surveys, and boundary marks are being erected. The total expenditure was Rs. 625. Mr. Fisher inspected the plantation in June, and reports that its condition is generally satisfactory.

54. *Encamping-grounds.*—The Superintendent of the Dún has made over to Mr. Fisher the care of the Káusrau, Lachiwála, Jhájra and Sahanspur encamping-grounds, with a view to the planting of suitable trees on them.

Yield and Working.

55. *Trees felled by Government agency (selection fellings).*—The return of trees felled is blank; the number felled during the preceding year was 136, but since the close of the previous year it has been determined only to fell by Government agency such trees as are required for departmental use.

56. *Outturn of timber and other produce cut and collected by Government agency.*—Including 13 old logs brought on to the books, the drift and confiscated timber and other produce collected by Government agency amounted to the following, *viz.*—

Timber (pieces)	4,720	C.ft. 7,008
Charcoal (maunds)	40	
Bamboos (scores)	50½	
Honey and wax (seers)	12	

In addition to the above, 85 logs of various kinds were brought to Dehra for experimental purposes.

57. *Timber and other produce received in sale depôts.*—There were no transactions during the year, and there are no regularly established depôts.

58. *Sales of timber and other produce cut and collected by Government agency.*—The timber and produce mentioned in para. 56, which consisted chiefly of the trees illegally felled in the Timli forest by Nathe Khán, were sold locally; and 297 additional

maunds of charcoal were sold from an old depôt, the amount being, under orders from the Comptroller-General, shown as "sold locally." The amounts realized are—

			Rs.
I (*a*)	...	...	81
I (*b*)	...	...	149
III	...	...	3,221
	Total	...	3,451

59. *Timber and other produce removed by purchasers.—Timber.*—Although the private forests in the Dún are extensive, they have, generally speaking, been much over-cut, and there is a large demand by merchants from Saháranpur, Meerut, and Delhi for all kinds of timber from the Government forests, good prices being obtainable for even the inferior kinds of wood. Almost all the larger sál trees are hollow at the base; this is probably due to the action of fire and to the extensive fellings of former years, when all the sound trees were taken out. The unsound trees will be gradually removed, so as to maintain a steady revenue until a crop of sound trees has been obtained; but instead of felling and cutting up the trees by Government agency and selling the converted timber, it is now found better to select and mark the trees in the forest, and to allow purchasers to remove them; a great deal of timber was sold in this way last year, chiefly from the closed, but partly also from the open forests. Sufficient care has not been taken in former years to ensure that the full value was paid for the various classes of dead wood removed by purchasers, and Mr. Fisher has now instituted an excellent arrangement, under which the foresters mark all dead trees in their forests in the following manner :—

(*a*) Trees fit for sawing are numbered and a list of them with their dimensions is kept.

(*b.*) Trees suitable for tors are marked with the property mark, counted and recorded, but are not numbered.

(*c.*) Trees fit for fuel only are marked with a ring of white paint, and only such trees may be touched by the holders of passes for the export of firewood.

The sales by special agreement or by passes, the amount of timber sold under which is known, amounted to 5,070 sál trees, 1,112 kukát trees, and 24,176 pieces of various kinds, the whole of which realized Rs. 26,564. The principal transactions were the following: 4,066 sál and 1,061 kukát trees, marked by Mr. O'Callaghan in compartments Nos. 18 and 20 of Bulawála, were sold to Mr. Scott at an all-round price of Rs. 3 per tree; he sawed up the timber and sold most of it at Hardwár, making the branches and refuse wood into charcoal; but most of the kukát trees were of very inferior kinds, such as semul, and the sál trees were nearly all hollow. The girdled and insect-eaten trees, 942 in number, remaining in compartment No. 24 of Bulawála, were sold at an all-round rate of Re. 1 a tree. The residue of the valuable timber lying in compartments Nos. 19 and 21 of Bulawála was sold in the form of tors at the usual rates. 62 sál and 51 kukát trees were sold standing in various parts of the open forests; while 220 sain trees and 43 kukát trees in Nágsidh, and 95 sain trees in the Tehri-Garhwál leased forests, were sold by the cubic foot of sawn timber actually removed. The sain realized 8 annas and 10 annas per cubic foot, and the average price received for these trees (including the bark, which sold at Re. 1-8-0 per cart-load) was Rs. 17-12-0 in Tehri-Garhwál and Rs. 10-4-0 in Nagsidh; the kukát trees, which were chiefly jáman, daura and bákli, were sold at an average price of Rs. 5-4-0 each. The above are excellent prices. Other applications to purchase timber were received, but for various reasons sales were not concluded. It may be mentioned that Rs. 50 were offered for a sál tree in the Chándpur forest, which is 10½ feet in girth and measures 35 feet to the first branch; this is probably the only sound sál tree of large size left in the Dún, and it was not sold. 19,081 dry sál tors were sold for Rs. 6,130; the export of tors requires very careful watching, in order to see that the traders do not ring trees with the object of producing dry wood for their next season's work. In addition to the

sales of timber, the quantity of which is known, Rs. 3,678 were credited as the share from leases on account of standing and fallen dead timber, the collection of which was included therein; but the quantity actually removed under the leases cannot be given. An outstanding of Rs. 6,400 was paid by the Canal Department. Wood on lines was sold for Rs. 20, and the timber on Messrs. Lister and Co.'s grant was sold for Rs. 2,492; this sum is still unpaid.

Firewood and charcoal.—The sale of cart-loads, camel-loads, pony and head-loads, chiefly from Chandrabani and Assarori, produced Rs. 1,484; the number of cubic feet thus exported has not been estimated, but in future an estimate will be attempted. 1,325 maunds of charcoal realized Rs. 765, and the share of lease-money was Rs. 1,186.

Bamboos.—19,197 scores of bamboos of various sizes sold by passes and tickets realized Rs. 1,400, and the share of lease-money was Rs. 3,901. A system of rotation for the cutting of bamboos has not yet been introduced.

Grazing.—The fees for grazing and the sale of fodder grass realized Rs. 9,827. Of this sum Rs. 4,186 were realized through the Superintendent of the Dún on account of grazing dues from residents, Rs. 17 were produced by the sale of fodder grass, and the remainder, or Rs. 5,624, was on account of grazing fees paid by non-residents.

Minor produce.—The total sales amounted to Rs. 5,475, of which Rs. 1,834 were received for passes and tickets, and the remainder was on account of leases. The sales of limestone from the river-beds amounted to Rs. 1,083. 200 maunds of black myrobalans were sold for Rs. 50, and revenue from this source may increase. Rs. 450 were received on account of a lease to collect semla gum in Málkot, but the trees require a rest and a steady income cannot be expected from them. The question of the right of the neighbouring landholders to collect limestone in the river-beds bordering their property is under consideration.

60. *Farming leases.*—Owing to the difficulty of ensuring proper supervision over the sales of forest produce by subordinates, the system of farming leases has been largely extended, and the whole of the dead fallen wood, bamboos, and minor produce in the open forests, and in the Tháno and Bahera closed forests, were leased. A list of the forests to be leased and of their boundaries was drawn up and advertized, and the leases were auctioned in October to the highest bidder. Standing dead trees in Dholkot, Chándpur, and in the leased Tehri-Garhwál forests were also sold by lease. It has not yet been found possible to estimate the quantity of produce removed under these leases, but an endeavour will be made to do this; neither is it possible, when the leases include several kinds of produce, to assign the revenue with accuracy to the various heads of account; this is at present done by guesswork. The leases of 12 tracts for the collection of fallen dead wood, bamboos and minor produce (other than limestone), horns and skins, realised Rs. 10,020, which was allotted as follows:—

	Rs.
Fallen dead timber	2,663
Ditto firewood	1,186
Bamboos	3,901
Minor produce	2,270
Total ...	10,020

Rs. 1,015 were also realised by the sale of three leases for the collection of standing dead wood, Rs. 550 for the collection of limestone, Rs. 213 for hides, Rs. 50 for horns, and Rs. 25 for manure, so that the total sums realized by leases and credited under head II. stand thus—

	Rs.
Timber	3,678
Firewood	1,186
Bamboos	3,901
Minor produce	3,108

A drift wood lease of the Song, Suswa, and Jákhan rivers was sold for Rs. 375, which sum was credited under head III.

The sales by means of leases of course largely reduced the sale of produce by tickets and passes; and it is desired to get in as much as possible of the revenue by these means or by direct payment into the treasury or head-office. During the past year the revenue was received in the following manner :—

	Rs.
Leases	12,781
Head-office or treasury	44,130
Collected at the chaukis by passes and tickets	7,157
Total ...	64,068

Financial Results.

61. *Receipts, charges, and surplus.*—The following statement gives the receipts and expenditure so distributed as to show the results of the transactions under the three main heads during the last three years :—

Years.	Departmental timber operations.			Other revenue.			Formation, protection and improvement of forests.	Total.		
	Receipts.	Charges.	Surplus.	Receipts.	Charges.	Surplus.		Receipts.	Charges.	Surplus.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	4,289	1,844	2,445	37,193	9,677	27,516	17,036	41,482	28,557	12,925
1880-81 ...	5,186	2,320	2,866	49,762	9,027	40,735	19,901	54,948	31,248	23,700
1881-82 ...	230	48	182	63,838	10,444	53,394	20,997	64,068	31,489	32,579
Average ...	3,235	1,404	1,831	50,264	9,716	40,548	19,311	53,490	30,431	23,068

The surplus revenue was Rs. 32,579, as compared with Rs. 23,700 in 1880-81 and Rs. 12,925 in 1879-80, and the steady and considerable increase is very satisfactory. It is also satisfactory to note that while the expenditure exceeded that of the previous year by only Rs. 241, the revenue increased by Rs. 9,120; and that while the total expenditure was increased by so small an amount, an additional sum of Rs. 3,219 was spent under AVIII., chiefly on boundaries and fire conservancy. The expenditure on communications and buildings was moreover less by Rs. 963 than during the previous year, although it is reported that, owing to Mr. Bryant's careful supervision, the roads and buildings are in excellent order. Departmental timber and firewood works having practically ceased, the revenue derived from these sources was reduced by Rs. 4,936 ; while the timber removed by purchasers realised Rs. 36,112, or an increase of Rs. 9,604 over the figures of the previous year. Purchasers come forward in numbers, and the increased revenue has been obtained without in any way over-working the forests, which are full of trees, the removal of which will improve the younger growth. Revenue on grazing was increased by Rs. 1,673, and that on minor produce by Rs. 1,512. The timber confiscated at Timli caused the revenue under head III. to be increased by Rs. 2,946. There was a falling off in the revenue on bamboos of Rs. 1,443, and small differences on other items caused a further reduction of Rs. 216, as compared with the figures of last year; but as explained above, when money obtained on leases has to be apportioned to the various headings by guesswork, it is not always certain that the results as regards any particular item are trustworthy. The surplus amounted to Rs. 117 per square mile or 2 annas 11 pies per acre. The figures for the two preceding years were Rs. 85 and Rs. 47 per square mile.

62. *Outstandings on account of contractors and disbursers.*—The outstandings at the commencement of the year amounted to Rs. 120; at the close of the year the amount was Rs. 938, which has been advanced for various works.

63. *Outstandings on account of revenue.*—At the commencement of the year the sum outstanding was Rs. 9,467, and at the close of the year it was Rs. 6,017, of which Rs. 2,492 are due from Messrs. Lister and Co. for timber made over to them on their grant, and Rs. 3,067 are due from the Canal Department (since paid).

64. *Stock.* (*a*) *Timber and other produce.*—There being no authorised sale depôts, the stock of timber and charcoal, valued at Rs. 273, has been written off.

(*b*) *Live and dead stock.*—An elephant valued at Rs. 2,000 was transferred to the Direction Division, while the value of buildings was increased by Rs. 1,368, and that of tents by Rs. 503; the increase on other items was Rs. 432. The total increase in value was Rs. 303 only.

SAHÁRANPUR DIVISION.

Area and Boundaries.

65. *Area.*—The area has been reduced by 34 acres, of which 30 acres belonging to the village of Deopur, and 4 acres belonging to Jowálapur, had wrongly been included within forest boundaries.

66. *Boundaries.*—When making the record of boundaries and boundary marks, it was discovered that additional boundary pillars were required, and that some of the old pillars required repair; this work has been in hand during the whole of cold weather, and it is hoped that it will be completed next season. Some of the additional pillars have been made katcha and without numbers, but permanent pillars with numbers will be substituted for them, the numbers being cut into blocks of stone which are fixed at the top of the pillars. In the central and western ranges some of the cut lines require clearing badly; this will be seen to next season, when cleared 10 feet lines will run from pillar to pillar. The total expenditure during the year was Rs. 96.

66*a*. *Disputed boundaries.*—The settlement of disputed boundaries in the main block of the central range led to the surrender of 34 acres of land; the new boundaries have been properly demarcated. There were three disputed portions of the Patri boundary, which have now all been settled; in one case the new boundary has been marked by pillars and a ditch, and in another case a *dagbel* was dug to mark the new line, but in the third case the boundary is to run straight from pillar to pillar, and no mark has as yet been made on the ground; ditches will be dug next season, and they will be carried round the whole of the Patri forest.

Protection and Improvement.

67. *Establishment.*—The permanent establishment, for which there is a grant of Rs. 136 per mensem, remained the same as for the previous year; it was supplemented by a temporary establishment costing on an average Rs. 382 per mensem.

68. *Offences.*—There were six new cases during the year, all for unauthorized felling or appropriation of produce; in five cases involving 18 persons convictions were obtained, but one case involving 16 persons was dismissed. Three additional cases were compounded by the Divisional Officer under section 67 of the Forest Act; the sum received was Rs. 83.

69. *Roads.*—Sixteen miles of roads in and around Lakarkot, Gunjarban, and Rasúlpur were repaired at a cost of Rs. 79, and arrangements have been made with the Collector regarding the repair of the submontane road from the Ganges to the Jumna; this is a district road, and the allowance for its proper repair is now too

small, but it will be increased by a grant from forest funds. The following is an abstract showing the roads which are maintained by the Department :—

	Miles.
Cart roads, 15 feet wide	3 ½
„ 10 „	28 ¼
Bridle-paths	1
Foot-paths	1 ½
Total ...	34 ¼

70. *Buildings.*—The total expenditure on buildings was Rs. 259, the details of which are as follows :—

	Rs.
Site of Dholkhand rest-house	137
Ranger's hut at Ráni chauki	78
Collection of materials for Sahansra rest-house ...	36
Petty repairs	8
Total ...	259

The sum of Rs. 700 was paid in 1880 as share of expenditure on account of the repair of the Khára Canal Chauki, with a view to its being available for occupation by the officers of the Forest Department; but the sum was refunded by the Executive Engineer during the year, on the ground that inconvenience might result from the joint ownership. The following abstract shows the buildings which are maintained by the Department :—

Description.	For the use of			Wells.	Total.
	Officers.	Subordinates.	Offices, stores, &c.		
Permanent	2	1	...	2	5
Semi-permanent	...	1	...	...	1
Temporary	...	21	...	...	21

71. *Fire conservancy.*—The area of which the protection was attempted was increased by 15,907 acres, and the total area under protection is now 36,126 acres, or nearly one-fifth of the total area of the division; the increase is due to the closing of the Chillawála and Gáj blocks, together with portions of Andhori, Bám and Betban. Only 40 acres have been burnt, *viz.*, in the Ferozpur plantation (Patri), where great damage was done to the young plants; they have however since thrown up very vigorous shoots from the ground; the fire broke out during the burning of the fire lines. The area burnt is only ·1 per cent. of that of which the protection was attempted, and great credit is due to Mr. Lowrie for the success he has achieved. The exterior lines are 200 feet wide and the interior lines are 100 feet wide, the trees being left standing on them; but Mr. Lowrie considers that the interior lines should be 150 feet wide, and that on the outer lines the standing trees should be cut down and their roots extracted, for he says that the grass remaining green under the trees until a late date prevents the complete burning of the lines until the grass lands surrounding the forests are on fire, and that the trees serve to collect in heaps the dead leaves which would, if the lines were completely clear, be blown across them; I have given him permission to carry out his ideas. The circumstances in Saháranpur differ from those in the Dún; here the climate is more moist and the grass much higher, while in Saháranpur the grass dies earlier and hot winds prevail from March until the rainy season sets in. The effect of fire protection is very marked, especially in the case of areas growing khair and sissu, which, as they do not suffer much from frost, are now enabled to grow up rapidly; a good effect is also noticeable in the case of the large watercourses which come down from the main ridge, the beds of which are

gradually filling up, and numbers of seedlings, principally of khair and sissu, are said to be found on their edges; this is a very satisfactory result. The total expenditure on fire conservancy to 15th July was Rs. 1,760, or Rs. 59 per 1,000 acres of the area actually protected; the figures for the previous year were Rs. 115, and for the year before Rs. 98 per 1,000 acres.

72. *Exclusion of cattle.*—Flocks and herds are strictly excluded from the whole of the area protected from fire; but arrangements have been made to permit the inhabitants of certain villages to water their cattle in the Chikna, Sendli, and Betbán raus. The beds of these raus have been cleared, and a 200 ft. line has been burnt on one bank as far as the water; the cattle assemble at the chauki at midday, and are accompanied by a fire-watcher until their return. This arrangement has removed a hardship which was undoubtedly felt by some of the neighbouring villagers.

73. *Plantations.*—Sixteen acres were added during the year, the total area being now 112 acres. Thirteen acres were struck off the Ferozpur plantation, which was erroneously said to be 75 acres in extent, its real area being 62 acres. The expenditure during the year was Rs. 315.

Shámansur (khair and sissu)—The whole area was resown, two acres being added and a fence being put round the plantation; the total cost was Rs. 118. In the old area of four acres patches two feet square at 10 feet intervals were worked up to a depth of 18 inches and sown with khair; the seeds have germinated freely, but some damage has been done by pigs, which broke the fence and rooted up the ground. The additional two acres was sown in alternate lines of khair and sissu; the lines were two feet wide and worked up to a depth of 18 inches. The lines and patches were all covered with cut grass during the time of the severe frosts, and the seedlings were thus successfully protected from injury.

Ferozpur (chiefly sissu).—The expenditure was Rs. 38. Ten acres were sown (in continuous lines one foot wide and worked up to a depth of one foot) with seeds of sissu, khair, mohwa, nim, and kikar; the mohwa has been the most successful, nim has done fairly well, but very few plants of the other kinds are alive, they have been much damaged by frost and by pigs. Mr. Lowrie thinks that pigs would not do so much damage if the seeds were sown in patches instead of in continuous lines, and this will be tried. Whenever the grass was pressed down over the plants, they escaped injury by frost, and they will in future be protected by a covering of cut grass. A severe fire occurred on the 31st December, when all the plots except Nos. 13, 17, 18 and 19 were burnt.

Rasúlpur (khair and sissu).—The seedlings are doing fairly well.

Kálushâhid (bamboos.)—Of the 250 stocks which remained alive at the beginning of the year, out of 3,000 planted in August 1880, only 51 now survive, notwithstanding that they were watered during the hot weather; many of them were eaten by white-ants, and it is thought that they were put out too late in the rains. In one half of the two and a half acres fenced in during the previous year, 590 stocks were put out at the end of June in patches one foot square and 10 feet apart; a few died at once and were replaced, and 241 are now alive and have thrown out vigorous shoots. In the other half of the fenced area seed of *Dendrocalamus strictus* was sown in lines of patches, the lines being 10 feet apart and the patches 5 feet apart in the lines; the seed germinated freely, but the season was very unfavorable, there being long breaks in the rains during June and July, and the seedlings are all dead. It was noticed that there were very few natural seedlings of this season in the forest. An area of 1¼ acres round the forester's hut was sown with khair and sissu, but the seedlings nearly all died, and the ground was then (in August) sown with the seed of *Bambusa arundinacea*, but the seedlings again all died. The total expenditure at Kalushâhid was Rs. 110.

Gunjarban (khair and sál).—In the portion sown with khair, the grass was cleared along the lines, when many blanks were found; these will be filled up. One and a quarter acres in compartment 3 of Gunjarban were sown with sál. In two-thirds of

this area the seed was sown in patches 2 feet square and 10 feet apart, while in the remainder the patches were in lines 10 feet apart, the patches being 3 feet apart in the lines; the total number of patches was 688, and in most of them the seeds germinated well. In November they were covered with cut grass in order to protect them from the frost, but the work was not well done, and there were many deaths from this cause; the expenditure was Rs. 49. Last year is said to have been the best of the last five years for the production of sál seed.

74. *Thinning of bamboos.*—The experiment reported last year was on too small a scale to give very definite results; the year was a remarkably good one for the production of bamboos, and nothing remarkable was observed regarding the productive powers of the thinned clumps.. Thirty fresh clumps have now been selected, and in 10 of these all the stems were cut down; in 10 others six good stems were left, while in the remaining clumps only half the stems were taken. The result will be reported.

75. *Creeper-cutting.*—Rs. 252 were spent in creeper-cutting in Gunjarban, Sakrauda, and Rasúlpur.

76. *Coppicing of sál.*—In January, 1881 a contractor, who bought some sál trees, cut them down, leaving stools three feet high; 380 of these stools were cut flush with the ground in April and early in May, and about 250 of them have thrown out vigorous shoots, some of which were in the month of February seven inches high and four inches in girth.

Yield and Working.

77. *Trees felled by Government agency.*—No trees were felled, neither were any felled during the previous year.

78. *Outturn of timber and other produce cut and collected by Government agency.*—The only collections by Government agency consisted of the following amounts of drift wood, firewood and bamboos from the Ganges, *viz.*:—

Timber (pieces)	258 c.ft.	710
Firewood	,,	1,930
Bamboos (scores)		62½

and 25 additional scores of bamboos were bought in the Hardwár bazár for the Ordnance Department.

79. *Timber and other produce received in sale depôts.*—There are no regularly established sale depôts, and there were no transactions during the year.

80. *Sale of timber and other produce cut and collected by Government agency.*—The timber and produce mentioned in para. 78 was sold locally, and the following amounts were realized for it:—

	Rs.
I.(c)	46
III.	485
Total ...	531

81. *Timber and other produce removed by purchaseers.*—*Timber.*—In accordance with the suggestion made by the Inspector-General of Forests, and mentioned in the last report, it was determined to discourage the felling of green timber for sale to merchants; but certain arrangements, which had been previously entered into with contractors, had to be carried out, and under them 13,344 pieces of green timber were removed, chiefly from Súkh, Chillawála, and Gáj blocks. The contractors selected the trees, and converted them into karis and bargas, which they brought to the chaukis; here the wood was measured before it was removed. The rates charged were usually six annas for 1st class, four annas for 2nd class, and three annas for 3rd class wood per cubic foot. Generally speaking, the timber brought out was of very inferior quality, showing that there is no more good timber

easily accessible, and that the stoppage of such fellings is a wise measure; but the demand for timber of small size is very great, and the Saháranpur forests are at present quite unable to meet it. The amount realized from these sales was Rs. 5,354. 2,058 khair and gosham charans, cut chiefly in the Majhára block, were sold, mostly to villagers residing near the forest; they realized Rs. 1,849, or an average of about Rs. 18 per score. The stock of khair in Saháranpur is small, but Mr. Lowrie reports that its sale will soon be materially affected by the increasing use of the cast-iron rollers manufactured at Roorkee. These rollers enable a great saving in time, labor, and money to be effected, while they are said to increase the outturn by 15 per cent; but one objection to them is that the oil with which they are lubricated becomes mixed with the cane-juice and imparts a disagreeable flavor to it; and another objection is that the prime cost of the rollers is great. Mr. Lowrie however reports that the second difficulty is overcome by the more wealthy men purchasing the mills and letting them out on hire to those who cannot afford to buy mills of their own. 419 ploughs and 5,221 pieces for building native houses were supplied to villagers residing near the forest, Rs. 764 being received on this account; there was an unusual demand for house props this year, owing to a number of villages having been burnt, some of them more than once in the year. 1,359 dry sál tors were exported, principally from the Lakarkot, Gunjarban, Rasulpur and Dholkhand closed blocks, which were opened from October to December for this purpose, but also to some extent from Mohan; the amount realized for them was Rs. 538. The total amount of timber removed by purchasers was 22,401 pieces, which realized Rs. 8,505.

Firewood and charcoal.—The sale of cart-loads and head-loads of firewood and charcoal realized Rs. 1,679; in future an endeavour will be made to show the number of cubic feet exported in this way, but the figures cannot now be given for 1881-82. The share of leases amounted to Rs. 3,305. The demand for fuel is said to be great, especially in the eastern range, which is the nearest to Hardwár, Kankhal, Jowálapur, and other towns, and wood from this range can also be readily taken by way of the canal to Roorkee; without cutting green trees on the hills it is difficult to meet this demand, but the subject will receive attention, and probably enough green trees for this purpose may be removed without doing much injury to the forest.

Bamboos.—The number of bamboos exported under passes and tickets (chiefly from the Dholkhand block) was 10,711 scores, which realized Rs. 1,024. The share of lease money was Rs. 2,504, the total revenue being Rs. 3,528. The rotation system mentioned in last report was strictly carried out, and Mr. Lowrie is hopeful that with continued fire protection there will be a steady increase in the revenue from this source. The rate for 10 ft. bamboos was raised from 1½ annas to 2 annas.

Grazing.—The fees for grazing and sale of fodder grass realized Rs. 13,922, of which Rs. 6,692 were received through the Collector from villagers residing near the forests, and Rs. 7,230 were received at the chaukis. On the collection of the former sum Rs. 129 were paid as fees to the lambardárs and patwáris.

Minor produce.—The total revenue from this source amounted to Rs. 5,740, of which Rs. 2,435 were received for passes and tickets, and Rs. 3,305 is the share of lease-money allotted to this head of account.

82. *Farming leases.*—The system of farming leases was continued in the eastern and central ranges, and will now be extended to the western range. The area leased consisted chiefly of the open blocks; but some of the closed blocks were opened for 2½ months of the rains, and Rs. 1,284 were received from them, no injury being done by their having been opened. During the year there were leases running for 20 blocks, the total sum paid at auction on them being Rs. 14,195; of this sum Rs. 3,885 were paid last year, Rs. 9,114 were paid during the year under report, and there is an outstanding of Rs. 1,196. It has not yet been found possible to estimate the *quantities* of produce exported under the leases, but an endeavour will be made to do this in future; neither is it possible to distribute the revenue accurately among the

various heads of account, but the sum paid in during the year has been allotted as follows:—

	Rs.
Firewood and charcoal	3,305
Bamboos	2,504
Minor produce	3,305
Total ...	9,114

The leases now run for 12 months from various dates; this plan is objectionable, and a better arrangement will be made in future. A drift wood lease of the Ganges river realized Rs. 256. Confiscated wood sold by auction realized Rs. 605. If the revenue of the year be distributed according to the system of its collection, the figures stand thus:—

	Rs.
Leases	9,370
Collected at chaukis on passes and tickets	15,397
Paid into the head-quarters office or treasury	13,469
Total ...	38,236

Financial Results.

83. *Receipts, charges and surplus.*—The following statement gives the receipts and expenditure so distributed as to show the results of the transactions under the three main heads during the last three years:—

Years.	*Departmental timber operations.*			*Other revenue.*			*Formation, protection and improvement of forests.*	*Total.*		
	Receipts.	Charges.	Deficit.	Receipts.	Charges.	Surplus.	Charges.	Receipts.	Charges.	Surplus.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ...	...	5	5	31,504	11,343	20,161	9,753	31,504	21,101	10,403
1880-81 ...	...	...	...	27,080	10,237	16,843	7,869	27,080	18,106	8,974
1881-82 ...	46	145	99	38,190	9,250	28,940	5,793	38,236	15,188	23,048
Average ...	15	50	35	32,258	10,277	21,981	7,805	32,273	18,132	14,141

The surplus revenue was Rs. 23,048, as compared with Rs. 8,974 in 1880-81, and Rs. 10,403 in 1879-80. This is a very satisfactory increase; but it should be noted that while the revenue was increased by Rs. 11,156 and the expenditure was decreased by Rs. 2,918, the charges for the pay and travelling allowances of superior officers were Rs. 4,692 less than those for the previous year, owing to the comparatively low rate of pay drawn by Mr. Lowrie; and also that, owing to the sale of green timber to merchants having practically ceased, it will be difficult in the future to maintain the present surplus. There is an increase on all items of revenue, the detail being as follows:—

	Rs.
Timber removed by purchasers	2,953
Firewood and charcoal removed by purchasers... ...	1,105
Bamboos	124
Grazing	4,618
Minor produce	776
Confiscated and drift wood	1,346
Other items	204
Total increase ...	11,156

The timber removed by purchasers consisted chiefly, as has been previously stated, of wood for the sale of which arrangements had been made before it had been decided to reduce the sale of green trees; but a larger amount than usual of house-building materials was taken out by the neighbouring villagers. The increase in grazing revenue is chiefly due to the collection of arrears, and that on confiscated and drift wood is due to the sale of timber which contractors forfeited in consequence of their not having exported it within the allotted time. The total increase on firewood, bamboos, and minor produce removed by purchasers was Rs. 2,005; but, as in the case of the Dehra Dún Division, a considerable amount of the revenue was allotted by guesswork from the money realized on leases.

The decreased expenditure amounting to Rs. 2,918 is thus accounted for. There was an increase on the following items, *viz.* :—

	Rs.
Timber removed by purchasers	421
Plantations	315
Protection from fire	615
Refunds	910

while there was a saving on the pay and allowances of superior officers amounting to Rs. 4,692; and the balance of increases and savings on other items was a saving of Rs. 487.

84. *Outstandings on account of contractors and disbursers.*—The outstandings at the commencement of the year amounted to Rs. 50, and at the close of the year the amount was Rs. 291.

85. *Outstandings of revenue.*—At the commencement of the year the sum outstanding was Rs. 2,444, while at the close of the year it was Rs. 3,393; of this sum Rs. 2,197 were on account of grazing dues and Rs. 1,196 on account of farming leases. A large portion of the arrears of grazing dues are irrecoverable, and application for permission to strike them off will be made.

86. *Stock.*—(*a*) *Timber and other produce.*—There is no timber or other produce in stock.

(*b*) *Live and dead stock.*—Increases and decreases in several small items result in an increase in value amounting to Rs. 123.

JAUNSÁR DIVISION.

Area and Boundaries.

87. *Area.*—There has been no change in the area during the year.

88. *Boundaries.*—The boundaries and boundary marks are reported to be in fair order; Rs. 330 were expended on cutting lines, making new pillars, and repairing old ones. The Soi Toli Block (Cantonments) was demarcated by 28 numbered pillars.

Protection and Improvement.

89. *Establishment.*—The permanent establishment, the sanction for which amounts to Rs. 196 per mensem, was the same as that maintained during the previous year. The temporary establishment cost on an average about Rs. 111 per mensem.

80. *Offences.*—Nearly two-thirds of the total number of cases in the circle occurred in this division, and the number was nearly double that of the preceding year, but it will be observed that the number of persons involved was not much increased. Four were cases of firing the forests; 21 of unauthorized appropriation of forest produce, 8 of grazing without permission, and 11 were "other offences." In 30 cases involving 59 persons convictions were obtained; in 11 cases involving 18 persons the defendants were acquitted, and three cases are pending. Of the

11 "other offences," four were against *shikaris*, six were for cultivating land without permission within forest boundaries, and the other case was one of a man occupying a Government building without permission. Thirty-nine offences were compounded under section 67 of the Forest Act, the sum received being Rs. 108 ; all were petty cases of cutting produce, or of grazing or lighting fires without malice or intention to cause injury.

91. *Roads.*—The following statement shows the expenditure on new roads and paths:—

Name of roads.	*Cost.* Rs.
Mundáli to Bomnai	201
Bomnai grazing path	175
Mundáli to Karámba Láni	407
Mundáli to Dogra Dhár	221
Tutwa inspection path...	465
Karámba Láni to Dogra	163
Kistul to Lakhau	182
Hajáwa fuel road	159
Mohna road ... ... } Agargádh inspection path ... ... } Deothát road ... ... }	601
Total about 24 miles, costing ...	2,574

In addition to the above, Rs. 194 were spent on new paths in the cantonment blocks, and Rs. 37 on paths in the Chákrata forest garden.

The following roads and paths were repaired:—

Name of road.	*Cost.* Rs.
Koti inspection path	21
Tons road...	760
Kailo road	69
Hajáwa road	24
Missau road	19
Mohna road	250
Deobán to Bodyar	155
Total ...	1,298

Miscellaneous charges (Rs. 254), bring the total expenditure on roads up to Rs 4,357. The whole of the expenditure on the Tons road, on which is a heavy traffic entirely unconnected with the Department, is charged against the Forest budget, and a representation on this subject will be made.

The following statement shows the roads which have been constructed and are maintained by the Forest Department:—

	Miles.
Main roads, 4 feet wide and over	74
Carrying roads, 3 feet to 4 feet wide	41
Inspection paths	39
Total ...	154

92. *Buildings.*—The expenditure on buildings was as follows:—

	Rs.
New rest-house at Mundáli	1,515
Sundry repairs to existing buildings	475
Total ...	1,990

The rest-house at Mundáli was much wanted for the inspection of the Dhárागádh forest, which will soon be worked.

The following statement shows the buildings of all kinds that are maintained by the Department in this division:—

Description.	For the use of			Wells.	Total.
	Officers.	Subordinates.	Offices, stores, &c.		
Permanent	6	5	3	...	14
Semi-permanent	2	6	3	...	11
Temporary	...	...	...	...	...

93. *Fire conservancy.*—The area of which the protection was attempted amounted to 38,314 acres, which is 400 acres less than the area of the previous year; the decrease is however only nominal, being due to a re-estimate of the protected area in the Báwar range. The area under fire conservancy amounts to almost exactly one-half of the division. Only 15 acres were burnt, or ·04 per cent. of the area of which the protection was attempted; the fire occurred in the Kálsi forest. The total expenditure to the 15th July was Rs. 546, or Rs. 14 per 1,000 acres successfully protected; the figures for the previous year being Rs. 12, and for the year before Rs. 24 per 1,000 acres.

94. *Exclusion of cattle, sheep and goats.*—The last report showed that cattle, sheep and goats were excluded from 15,879 acres of the area protected from fire. During the year the Kurwa forest, 130 acres, was closed; while to meet the urgent requirements of the neighbouring population, 998 acres in the Karámba forest have been temporarily opened, and the area from which herds and flocks are excluded is therefore now 15,011 acres.

95. *Plantations.*—The deodar trees seeded abundantly, and 15 maunds of seed were collected for local use and for distribution.

Konain.—In December, 1,084 patches five feet square were prepared in six acres of the Choli block, and two maunds of deodar seed were sown in them, but nothing can yet be said regarding the success attained. The cost was Rs. 69.

Bodyar.—The 3,858 deodar plants, resulting from the sowings of 1878, were put out in Ganwa over an area of six acres, a separation being effected between those raised on hard bottoms (2,744) and those raised in ordinary seed beds (1,114); 50 blue pine plants grown on hard bottoms were also put out. The plants grown on hard bottoms look more yellow than the others and some of them have died. The expenditure was Rs. 133.

Deothát.—In the month of August, 6,835 deodar plants from the Deothát nursery were put out in compartments 13 and 14 of Mohna block; and 530 spruce, 468 blue pine, and 367 karshu were put out in compartment 14. All of these, especially the deodar, are doing fairly well. 12,350 patches, in vertical lines 15 feet apart and 3 feet apart in the lines, were prepared in August in compartments 9, 11, and 12 of the Mohna block, and were sown with 3½ maunds of deodar and 27 seers of blue pine seed, and in this way 21 acres have been added to the area which is included in the Deothát plantations; the deodar seed has germinated remarkably well, and the blue pine is beginning to appear. Twenty seers of deodar and three seers of blue pine seed were sown in the Deothát nursery in December, and a large proportion of them has germinated. Some seeds of *Abies Smithiana*, *Abies dumosa*, and *Cupressus funebris* were also sown in April, but only the seeds of the first-named kind germinated. The cost of the work at Deothát was Rs. 615.

Cantonment blocks (Lurli).—A commencement was made to fill up the blank areas in Lurli by sowing 10 acres in the following manner:—A nursery was prepared in October, and 24 beds were sown with deodar and six with blue pine seed; the deodar germinated freely, and there are about 40,000 seedlings; the blue pine has also commenced to germinate, but it has suffered from mice and birds. In December, 6,345 patches, in vertical lines 15 feet apart, were sown with deodar and blue pine, every fourth line being blue pine; and in June 900 patches were sown with blue pine and bán acorns in alternate lines; they have germinated well. The expenditure was Rs. 136.

Rs. 800 spent on the Chakráta garden and coppicing of oak, and wrongly charged to AVIII. (*d*), make up the expenditure Rs. 1,753.

96. *Forest garden at Chakráta.*—Some Italian chestnut grafts were received in April from Saháranpur; but, owing to a mistake on the part of the cart-men, they were left for some 10 days in Chakráta before being planted, and the result is that all but 18 of them have died. Seeds of numerous species of *Eucalyptus* were received from Australia and sown in April. The following have succeeded the best, *viz.*:—

E. Gunnii, average height 6″.
„ *paniculata*, height 6″ to 2′.
„ *polyanthemos*.
„ *Stuartiana*, height 4″ to 1′.
„ *bicolor* „ 8″ „ 2′,
„ *capitellata* „ 4″ „ 1′.
„ *cinerea*, 101 seedlings.
„ *longifolia*, average height 6″.
„ *Luchmanna*, 31 vigorous seedlings.
E. macrorhyncha, 24 vigorous seedlings.
„ *sideroxylon*, height 6″ to 1′.
„ *resinifera*.
„ *diversicolor*, height 6″ to 1′. very healthy.
„ *leucoxylon*, numerous seedlings.
„ *regnans*, ditto ditto.
„ *rostrata*, ditto ditto.

The following species did not germinate well and are looking sickly:—

E. alpina.
„ *coriacea*.
„ *hæmastoma*.
„ *marginata*.
E. calophylla.
„ *hemiphloia*.
„ *Siberii*.
„ *patens*.

The seed of *E. siderophloia* was destroyed by mice, and the seedlings of the remaining species all died after germination; they are:—

E. eugenioides.
„ *goniocalyx*.
E. colossea.
„ *riminalis*.

It is too early to determine what species are best suited to the climate of Chakráta, but Mr. Hearle thinks that the following will probably be the most successful, *viz.*:—

E. paniculata.
„ *bicolor*.
„ *Luchmanna*.
E. sideroxylon.
„ *diversicolor*.

Most of the species suffer during the process of transplanting, and some of the large trees in the station, about 15 feet high, have had many of their principal branches broken off by the snow. Some seed of *Acacia melanoxylon* was sown at the end of October; it germinated in March, and 2,148 seedlings were transplanted into nursery lines in July. The weaker plants were killed by insects, and 1,742 now remain, the larger of them being three feet high. Some seed of *Broussonetia papyrifera*, received from Germany, was sown partly in boxes and partly in a seed bed at the beginning of April. The sowing in the bed entirely failed, but the seed sown in boxes germinated in June, and in August 210 plants were put out; at the end of the year 128 very healthy plants remained, some of them being over one foot high. Some deodar seed

was sown in December, and it germinated well in March and April. Some seed of the Cyprus cedar (*Cedrus Libani, var. brevifolia*) received from Cyprus, was sown in two boxes and a seed-bed early in April; that sown in the bed failed entirely, but the seed in the boxes germinated in May; many of the seed lings died off, and in August only 11 were found fit to put out; but at the end of the year only four remained, one only of which looked healthy. The total expenditure on the garden was Rs. 725.

97. *Coppice experiment.*—About two acres of forest in Kurwa block, consisting chiefly of bán (*Quercus incana*), rhododendron, and ayár (*Andromeda ovalifolia*) were coppiced in December. The shoots of the ayár have begun to appear, but the bán and rhododendron are still dormant.

Yield and Working.

98. *Trees felled by Government agency (selection fellings.)*—The number of trees felled during the year was as follows :—

Description.	4′ 6″ girth and over.	Below 4′ 6″ girth.	Total.	Cubic feet.
Fir	422	...	422	67,595
Oak	372	...	372	27,897
Box	...	98	98	925
Total ...	794	98	892	96,417

The number of trees felled during the previous year was 1,772, measuring 102,328 cubic feet, and the difference in the numbers is accounted for by the fact that no deodar was cut during 1881-82, and that the fir and oak trees felled for fuel were of large size as compared with those felled during the previous year, about one-half the number of trees yielding nearly the same amount of wood.

99. *Outturn of timber and other produce cut and collected by Government agency.*—Including the result of selection fellings, dead and fallen trees, confiscated and drift wood, the outturn was:—

	No.	*Cubic feet.*
Timber (dogs and pieces).... ...	6,335	1,361
„ ditto	35	Contents unknown.
Firewood	...	81,803
Charcoal (maunds)	203	„

100. *Timber and other produce received in sale depôts.*—The following amounts of timber, firewood and charcoal were received in sale depôts, *viz.*:—

	No.	*Cubic feet.*
Timber (pieces)	5,244	4,948
Firewood	...	136,365
Charcoal (maunds)	42	...

101. *Sale of timber and other produce cut and collected by Government agency.*—The depôt sales were as follows :—

	No.	*Cubic feet.*
Timber (pieces)	2,781	2,912
Fuel	...	141,148
Charcoal (maunds)	42	...

and the following produce was sold locally, *viz.*:—

	No.	*Cubic feet.*
Confiscated and drift timber (pieces)	31	Unknown.
Firewood	...	1,470
Charcoal (maunds)	157	...

The above produce realized the following amounts :—

	Rs.
I(*a*)	3,870
I(*b*)	33,313
III	33
Total ...	37,216

102. *Timber and other produce removed by purchasers.*—*Timber.*—The total amount removed was 2,108 pieces, and 14 cart-loads of gosham wood, which realized in all Rs. 681. The trees, 141 in number, and 146 bákli karis were bought by tradesmen of Dehra Dún and Mussooree ; the 1,818 tool handles were sold to the Executive Engineer, Military Works, at Chakráta, and to villagers.

Firewood and charcoal.—3,860 cubic feet of firewood and 307 maunds of charcoal were removed on payment of Rs. 200 and Rs. 199 respectively, and the share of lease-money allotted was Rs. 200 ; total revenue Rs. 599. The chief purchasers were Messrs. Meakin and Co. of the Chakráta Brewery.

Bamboos.—5,154 scores of ringáls and bamboos were sold for Rs. 167, and the share of lease-money was 10. Total revenue Rs. 177.

Grazing.—The grazing fees amounted to Rs. 1,063, including Rs. 140 allotted as share of the Kálsi lease. The Executive Commissariat Officer has not yet paid for grazing his cattle at Kálsi during the year.

Minor produce realized Rs. 261, of which Rs. 21 were for grass and stones, and Rs. 240 was the share of lease-money.

103. *Farming lease.*—The lease of the Kálsi forest was sold for Rs. 590, and this sum was allotted as follows :—

	Rs.
Firewood	200
Bamboos	10
Grazing	140
Minor produce	240
Total ...	590

There being so small an amount of revenue on minor produce, the amount which passes through the hands of the subordinate establishment is much less than in the Dún and Saháranpur Divisions. The revenue was collected as follows :—

	Rs.
Leases	590
Collected at chaukis	3,282
Paid to head-quarters office	8,940
Received by book transfer	31,870
Total ...	44,682

104. *Sales to public departments.*—117,205 cubic feet of firewood and charcoal, sold to the Executive Engineer, Military Works, and the Executive Commissariat Officer, realized Rs. 29,166 ; the estimated cost to the Department being Rs. 23,502, and the profit thus being Rs. 5,664. 1,933 cubic feet of timber, sold to the Executive Engineer, Military Works, Chakráta, resulted in an estimated deficit of Rs. 788.

The results of sales to public departments for the last three years are as follows:—

Year.	Timber.				Fuel.				Total.
	Cubic feet.	Revenue.	Cost.	Surplus.	Cubic feet.	Revenue.	Cost.	Surplus.	Surplus.
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.
1879-80 ...	2,285	3,245	2,964	281	104,582	18,826	17,710	1,116	1,397
1880-81 ...	5,727	5,361	2,307	3,054	82,435	20,222	19,773	449	3,503
1881-82 ...	1,933	2,328	3,116	Deficit. 788	117,205	29,166	23,502	5,664	4,876
Total ...	9,945	10,934	8,387	2,547	304,222	68,214	60,985	7,229	9,776

105. *Boxwood.*—In the winter of 1880-81, 77 trees were felled in the Jádi forest, and cut up into 331 logs of lengths varying from three feet to five feet, the contents being 456 cubic feet. Early in the spring the logs were carried to Chakráta, and thence carted to Saharánpur, wrapped in gunny, and sent by rail to Karáchi, and thence to Messrs. Churchill and Sim of London. The charges in India were as follows:—

	Rs.
Cutting and carriage to Chakráta	167
Carriage to Saháranpur	390
Gunny, coolies, marking and storage	144
Railway freight to Karáchi	743
Freight to London	405
Agent's charges	88
Total ...	1,937

Some of these items are unnecessarily high, and might be reduced in future by special agreements being made. 390 maunds, or nearly 14 tons, of wood were sent from Chakráta, and the weight in London was—12 tons 17 cwt. 2 qrs. 7 lb. It sold, at £30 per ton, for £386-6-10. After deducting discount (£0-13-2) and Messrs. Churchill and Sim's charges (£19-10-5), the balance, or £357-3-3, was remitted to India through Messrs. Grindlay and Co., whose charges amounted to Rs. 44, and the sum credited as revenue was Rs. 4,269. The profit amounted to about Rs. 5-11-0 per cubic foot. A further consignment of 29 tons was sent in March, 1882, but the result of the sale is not yet known.

106. *Free grants to villagers.*—The following list shows the trees and other produce supplied to villagers in Jaunsár Báwar free of charge—

Deodar trees, green	119
Dry deodar pieces	3,468
Firs and pines	488
Oaks	218
Other trees	107
Loads of torch wood	2,500
Ringáls (scores)	14½

With the exception of the deodar, cypress and torch wood, this is not more than one-half of the quantity to which the people are entitled under the agreement.

From the leased forests of Tehri-Garhwál, where no agreement has yet been entered into, the grants were as follows:—

Green deodar trees	809
Dry deodar pieces	1,950

107. *Manufacture of iron.*—The manufacture of iron has not so far been a financial success, but Dr. Warth has been asked to give his attention to the subject with a view to improving and cheapening the process; 8 maunds 25 seers were made at a cost of Rs. 105, or over Rs. 12 per maund, but only three maunds were sold at Rs. 4 per maund. It is not possible to estimate the success or failure of the attempt by so small an experiment, and the manufacture will now be undertaken on a larger scale, when the rates will no doubt be much reduced.

108. *Fuel experiments.*—The experiments to determine the relation between the cubic contents of solid and stacked fuel, and also the loss in weight undergone by fuel stacked in the open and under cover, are being continued. As before reported, the relation between stacked and solid fuel is found to be very nearly as 150 to 100. 1,642 maunds of fir firewood, partly green and partly dry, weighed, in August, 1880, 1,642 maunds, and measured 4,800 cubic feet (stacked); but in April, 1882, the same fuel was weighed and then restacked and measured, when the weight was 1,275 maunds, and the cubical content was 4,640 cubic feet. The loss in weight during one year and eight months was therefore about 22 per cent., while the cubic contents of the stack was reduced by 3½ per cent.

Financial Results.

109. *Receipts, charges and surplus.*—The following statement shows the receipts and expenditure so distributed as to give the results of the transactions under the three main heads during the last three years :—

Years.	Departmental timber operations.			Other revenue.			Formation, protection and improvement of forests	Total.		
	Receipts.	Charges.	Surplus.	Receipts.	Charges	Surplus.	Charges.	Receipts.	Charges.	Deficit.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80 ..	28,286	20,292	7,994	2,085	631	1,454	9,677	30,371	30,600	229
1880-81 ...	27,375	24,841	2,534	3 194	1,727	1,467	11,469	30,569	38,037	7,468
1881-82 ...	37,183	31,082	6,101	7,499	5,813	1,686	14,140	44,682	51,035	6,353
Average ...	30,948	25,405	5,543	4,259	2,723	1,536	11,762	35,207	39,890	4,683

The deficit was Rs. 6,353, which is about Rs. 1,100 less than the deficit of the previous year; this is a comparatively satisfactory result, seeing that an additional sum of Rs. 2,424 was spent on communications and buildings, and an additional sum of Rs. 713 on demarcation, improvement, and extension.

The revenue exceeded that of the previous year by Rs. 14,113. Of this Rs. 12,257 were on account of fuel and charcoal removed by Government agency; a regiment having been at Chakráta throughout the year, the demand by the Commissariat Department was greater than during the previous year. Rs. 4,153 additional were received under the head V.(c) (Miscellaneous), chiefly on account of the sale of boxwood in England. The revenue on timber removed by Government agency was less by Rs. 2,449 than that of the previous year, on account of the Public Works Department having paid in advance for some timber at the close of that year; while there is an increase of Rs. 152 on account of the balance of increases and decreases on other items. The ringál has flowered freely throughout the district, so that the small revenue derived from it will cease for some time; it is said to have flowered 16 or 17 years ago.

The expenditure exceeded that of the previous year by Rs. 12,998. There was an increase in the expenditure on departmental timber works amounting to Rs. 2,419,

on account of the preparation of rai scantlings for the Public Works Department; and an increase on departmental fuel works amounting to Rs. 4,244, caused, as above explained, by the increased demand made by the Commissariat Department at Chakráta. An additional sum of Rs. 1,127 was spent on roads, 24 miles of new roads and paths having been made; and an additional sum of Rs. 1,319 was spent on buildings, due to the erection of the Mundáli rest-house. There is an increase of Rs. 1,753 on account of plantations, 40 additional acres having been added; and of Rs. 4,129 under IX. (*c*) (Miscellaneous), chiefly on account of the second consignment of boxwood to England. The balance of increases and savings on other items gives a net increase of Rs. 484. On the other hand, the expenditure under A.VIII. (*f.*) was less by Rs. 1,530; planting work, which used to be charged to this head, being now charged to A.VIII. (*d*); and the Divisional Officer's pay and allowances came to Rs. 945 less than the same items in 1880-81.

110. *Outstandings on account of contractors and disbursers.*—The outstandings at the commencement of the year amounted to Rs. 4,900, while at the close of the year the amount was Rs. 4,886; this sum has been advanced for various works.

111. *Outstandings on account of revenue.*—At the commencement of the year the sum outstanding was Rs. 533, and at the close of the year it was Rs. 338.

112. *Stock.*—(*a.*) *Timber and other produce.*—The value of stock has been reduced as follows:—

					Rs.
Deodar scantlings	...	...	...	...	1,188
Other timber	...	...	...	...	106
Firewood	...	...	...	...	1,218
			Total	...	2,512

There were no deodar trees felled during the year, and a smaller quantity than usual of fuel was cut up, so that the stock on hand was reduced.

(*b.*) *Live and dead stock.*—The value is increased by Rs. 1,162, due to the erection of a new rest-house at Mundáli.

TONS DIVISION.

Area and Boundaries.

113. *Area.*—The area of the division was increased by the addition of 1,430 acres, temporarily demarcated in Bashéhr. A preliminary inspection of these forests by Mr. Moir has shown that they are not very extensive, and he does not think that it will be possible to demarcate more than 3,000 acres in all.; the area demarcated last year consists of seven detached plots, which therefore average little more than 200 acres each.

114. *Boundaries.*—In the Jaunsár Báwar portion of the division the pillars are all in good order, the necessary repairs having been executed during the year. The boundaries of the leased forests—Deota, Lambatách, Kotigádh, Surás, and Bámsu—were revised with a view to the preparation of the records of boundaries required by the rules lately made under the lease, and 64 new pillars bearing serial numbers were erected; a few additional pillars have still to be added. The erection of pillars to define the limits of blocks and compartments at Deota is nearly completed. The boundaries of the Raiengarh and Dádi forests were revised and pillars were erected round them; in some places the pillars were supplemented by 2 feet paths, which serve both as boundary and fire lines. The Raiengarh and Dádi forests are now being surveyed. The temporary demarcation of the seven Bashéhr forests alluded to in the preceding paragraph was effected by means of heaps of stones with a stout stake in the middle. The total expenditure on demarcation was Rs. 184.

115. *Disputed boundaries.*—There is a dispute between the Rájas of Tehri-Garhwál and Kuntal regarding the position of their boundary on the Pábar river. The Kuntal Rája sold the timber on the disputed tract to some merchants, who have felled a large number of trees; they have also launched some sleepers, but they have been prohibited from removing any more of the wood pending a settlement of the boundary dispute. Should the decision be given in favor of Tehri-Garhwál, the timber will become the property of Government, which holds a lease of the forests of that State.

Protection and Improvement.

116. *Establishment.*—The permanent establishment, the sanction for which amounts to Rs. 182, was the same as that maintained during the previous year, and the temporary establishment cost on an average about Rs. 128 per mensem. A special river establishment, costing Rs. 40 per mensem and not included in the above, was sanctioned for the Jumna from 1st March. Pending a decision as to the leasing or otherwise of the Jubal forests, two guards are employed to watch them, and their pay is recovered from the Rána. A man whose pay is recovered from the Kuntal Rája is employed to watch the timber felled from the area which is in dispute between the Rájas of Tehri-Garhwál and Kuntal.

117. *Offences.*—There were nine cases, of which eight were disposed of and one is pending; convictions were obtained against all the defendants in every case but one, in which one person was convicted and three were acquitted. Of the nine cases which occurred during the year, one was for injury by fire, five were for unauthorized appropriation of produce, and three were "other offences," which consisted of defacing marks on Government timber, setting snares in the snow, and assaulting forest guards. Mr. Moir remarks that, owing to the abundance of wood which is usually found in the hills, cases of unauthorized fellings are few; but that in the Bashahr there is a difficulty, owing to the non-realization of the fines imposed by the Wazirs, and he suggests that he should be placed in a position with regard to these forests similar to that occupied by the officer in charge of the Sutlej Division of the Panjab, who is an Assistant Superintendent of Hill States. This question will be dealt with in due course. Thefts of timber are said to have taken place on the Tons; but it is hoped that the new river establishment will be able to prevent this in future.

118. *Roads.*—The following expenditure was incurred on new roads and paths:

	Rs.
Bámsu, path extension	41
Paths in Deota	90
Paths in Khunigádh	15
Paths in Raiengarh and Dádi	126
Total ...	272

Repairs of existing roads have cost as follows:—

Main road and paths at Deota	342
Paths at Lambatách	179
Pábar path, Cháchpur paths, Tiuni bridge and repair of tools,	344
Total ...	865

The toal expenditure was Rs. 1,137.

The following statement shows the estimated length of roads and paths which have been constructed and are maintained by the Forest Department:—

	Miles.
Main roads, 4 feet wide and over	15
Carrying roads, 3 feet to 4 feet wide	43
Inspection paths	20
Total ...	78

The lengths are given approximately.

119. *Buildings.*—The erection of new buildings cost as follows :—

			Rs.
Stable and outhouses at Deota	...	...	220
Ditto at Lambatách	...	...	227
Dâk-runner's hut at Dharmigádh	...	...	32
	Total	...	479

Sawing timber for a new hut at Assau cost Rs. 159, and Rs. 600 were spent on the necessary repairs to existing buildings. The total expenditure was Rs. 1,238.

The following statement shows the buildings of all kinds that are maintained by the Forest Department :—

Description.	*For the use of*			Wells.	Total.
	Officers.	Subordinates.	Offices, stores, &c.		
Permanent	5	...	1	...	6
Semi-permanent	...	2	2	4	8
Temporary	...	...	...	...	...

120. *Fire conservancy.*—The area of which the protection was attempted was increased by the addition of 1,430 acres in Bashâhr, and amounted to 28,432 acres, or more than four-sevenths of the total area of the division.

The areas burnt were as follows :—

					Acres.
Deogár	...	...	...	...	120
Dadi	...	...	...	...	2
Deota	...	...	...	...	526
Báshla	...	...	...	...	1,090
Bashâhr	...	...	...	...	12
			Total	...	1,750

This amounts to a little over 6 per cent. of the area of which the protection was attempted. The expenditure to 15th July was Rs. 674, which amounts to Rs. 25 per 1,000 acres successfully protected ; the figures for the previous year being Rs. 17, and for the year before Rs. 41 per 1,000 acres.

121. *Exclusion of cattle, sheep and goats.*—Cattle, sheep and goats are as a rule excluded from the area protected from fire, but they are admitted to the higher portions of the Deota, Lambatách, Raiengarh, and Dádi forests during four or five months of the year. Portions of the Banarpani and Chakoria blocks of the Lambatách forest were opened to sheep and goats for about three weeks, with a view to their getting rid of the dense undergrowth which has sprung up in the ravines where the trees were ringed, and thus allowing the deodar seed to germinate; but the result of this experiment is still unknown.

122. *Plantations.—Deota.*—An area of 50 acres was planted and sown at a cost of Rs. 534 ; but 11 acres of old plantation at Mandhol was struck off as being a complete failure. No nursery plants were available, as nursery beds had not been prepared in former years ; but 22,250 seedlings were collected from forest paths and planted in six nurseries, which have been arranged so as to be near the places where the plants

will eventually be put out. Some deodar seed has also been sown in the nurseries, and it has germinated well; the seedlings will be bedded out during the rains. 2,140 of the best of the deodar plants collected from the forest were put out in Partil block, in the moist ravines where fir trees were ringed in 1878; they were planted in groups of five in cleared spaces of 10 feet diameter and 30 feet apart, and each site was marked by stakes six feet high. 700 plants were also put out out in a blank space in compartment No. 2 of Partil block; they were planted in lines 15 feet apart, the distance between the plants in the lines being five feet. The past year was a most favorable one for the production of deodar seed; it is said to have been even better than 1878, which was the last good year, and the consequence is that throughout the deodar forests numerous natural seedlings are found, even in places choked with grass, ringáls and *indigofera*; old sawing sites, which have not been abandoned for more than two years, now show a fair number of seedlings. It is feared that most of these seedlings will come to nothing; but as the ringál has nearly all seeded, and will therefore die, a larger proportion of the deodar seedlings may be expected to establish themselves than would otherwise be able to do so. Advantage was taken of the good crop of deodar seed to sow up five blank grassy spaces in compartments 1 and 2 of Partil block; the seed was sown in November and March in vertical lines of patches 15 feet apart, the patches being five feet apart in the lines; and a little chil (*P. excelsa*) seed was mixed with the deodar in one or two places, but very little seed of this kind was available. The deodar seed germinated freely in March, but unfortunately there was a severe hailstorm on the 8th April, which killed nearly all those plants which had not some protection from grass, trees or bushes; this, Mr. Moir thinks, points to the necessity for providing nurses, or for putting out strong nursery plants in exposed situations, and he suggests that chil seed might be sown two years before the deodar. This plan will be tried, but it will be necessary eventually to thin out the chil plants as they begin to overpower the deodar. Mr. Moir thinks that vertical lines are not so good as horizontal ones for sowing, as they are more difficult to inspect, and they may tend to promote the washing away of the soil. He tried the experiment of clearing about 225 spaces at varying distances from seed-bearing deodar trees, and found that the seed was carried to distances varying from 50 to 100 yards accordingly to the slope of the hill; the seedlings were however killed by hail or eaten by birds, and the result was not on this occasion satisfactory. He also dug up the ground in parallel lines in the neighbourhood of seed-bearing trees, and subsequently found the lines fairly well covered with seedlings to a distance of about 50 yards from the parent trees. The total area planted and sown at Deota was 17 acres; and all places where seed was sown or plants put out were so marked that they can be readily found again.

Lambatách.—Six nurseries, aggregating about three-fourths of an acre, have been established as near as possible to the places where the plants will be wanted; the nurseries have been filled partly by collecting seedlings from the paths, and partly by sowing seed, which has germinated very well. In a portion of Gadásna block, which is thickly covered with *indigofera*, 50 spaces 10 feet in diameter were cleared, and in them were planted groups of the best plants that could be obtained from the forest; about half of these appear to have established themselves. About 20 acres of grassy slopes in Dámpti block were sown up with deodar and blue pine, the seed being sown in 11,800 patches arranged in vertical lines; and about four acres were similarly sown in Goria block, the number of patches being 2,350. The seed, which was sown in November, germinated well in March; but all the seedlings situated in exposed places were, as was the case in Deota, killed by the hail. The total area sown and planted at Lambatách was 25 acres.

Mirách.—About half an acre of nursery beds was prepared and filled with deodar plants from the forest, some seed being also sown. 3,252 patches in Lambidhár block, and 1,970 in Mirách block, arranged in vertical lines, were sown in April; but the result of the sowing is not yet known. The total area worked over at Mirách was eight acres.

123. *Thinning out of young Pinus excelsa at Lambatách.*—Over 36 acres in Chakoria block, and four acres in Garúsna, where the more rapidly-growing kail trees were choking the young deodar, the smaller kail trees were entirely cut away, while the larger trees were ringed; the kail was not removed unless it was actually suppressing young deodar, and where there were no deodar seedlings found the kail was left untouched. The work was done in a satisfactory manner by men trained by Mr. Moir, and the cost of the work was Rs. 27, or about 10 annas an acre.

124. *Ringing fir trees at Deota*—Compartment No. 3 of the Temple block of Deota was carefully gone over by Mr. Moir and Mr. Bryant with a view to killing such of the rai and morinda trees as were interfering with the growth of the neighbouring deodar; 2,370 large trees were ringed, and 507 smaller ones were cut out entirely, all of them having been previously selected and marked by one of the above-named officers. Great care was taken not to lay the ground bare, and fir trees which were not interfering with deodar were left untouched. The cost of this work was Rs. 25, or 1½ pies per tree.

Yield and Working.

125. *Trees felled by Government agency (selection fellings).*—The number of trees felled during the year was as follows:—

Description.	4′ 6″ girth and over.	Below 4′ 6″ girth.	Total.	Cubic feet.
Deodar	1,289	...	1,289	...
Chir (*P. longifolia*)	37	...	37	...
Kail (*P. excelsa*)	1	...	1	...
Miscellaneous	42	...	42	...
Total	1,369	...	1,369	331,298

All the above trees are classed as "selection fellings," but 212 of them were dry standing or fallen trees. The number of trees felled during the previous year was only 206; and the difference is due to the fact that at the beginning of 1880-81 there were 542 felled trees on hand, while at the end of that year there were none on hand, so that trees for the whole outturn of sleepers, and for local consumption on the slide and buildings during 1881-82, had to be cut; 500 deodar trees were also cut for export during 1882-83. Considering that the locality where the fellings took place is the most precipitous in Deota, the damage caused by the falling trees was less than was expected. The trees cut for the current year's work were all marked during November by Messrs. Moir and Bryant in Katatách and Dopta; the total number of trees marked was 676, and it is expected that dry trees from Katatách will bring the number up to the total required, *viz.*, 750. As a rule the trees were marked where plenty of young growth was found on the ground.

126. *Outturn of timber and other produce cut and collected by Government agency.*—The outturn was as follows:—

	Number.	*Cubic feet.*
Sleepers purchased from Messrs. Winton and Braidwood at Raiengarh	47,680	159,976
Logs purchased from Messrs. Winton and Braidwood at Raiengarh	328	5,576
Old sleepers found in Dádi	281	976
Converted departmentally—		
Sleepers	45,866	61,155
Other pieces	2,436	3,540
Total	96,591	231,223

The outturn of good sleepers sawn was about 60 per tree felled. Of the 45,866 sleepers which were prepared, 6,598 were left at the head of the slide, as it was thought that 39,268 together with 287 sawn during the previous year, and 12,527 from Ráiengarh, would form a sufficiently large batch, seeing that no indents had been received.

127. *Timber and other produce received in sale depôts.*—The following timber was received in the sale depôt at Delhi, *viz.* :—

	Number.	Cubic feet.
Broad-gauge deodar sleepers	394	1,375
Metre-gauge ditto	50,350	67,133
Deodar beams	15	75

128. *Sales of timber and other produce cut and collected by Government agency.*—The depôt sales were as follows:—

	Number.	Cubic feet.
Broad-gauge deodar sleepers	173	608
Metre-gauge ditto	47,799	63,732
Deodar beams	15	75

and the following were sold locally:—

	Number.	Cubic feet.
Broad-gauge deodar sleepers	181	580
Metre-gauge ditto	459	612
Deodar beams	15	141

129. *Timber and other produce removed by purchasers—Timber.*—590 deodar and 319 chir trees were sold standing to timber merchants. Numerous applications for trees have been received, but some difficulty was experienced in fixing the rates, as this system of selling trees had not been tried before. The deodar trees, which were situated in the Kotigádh, were sold at Rs. 8-2-0 each; and the chir trees, which were in the valley of the Tons, were sold for Rs. 2-14-0 each; twenty chir logs were sold for Rs. 5. The total sales of timber realized Rs. 5,640, of which Rs. 5,621 were received during the year.

Grazing.—The grazing of sheep and goats, bullocks and buffaloes realized Rs. 321.

130. *Farming leases.*—The driftwood lease of the Tons and Jumna was sold to Mr. Winton for Rs. 150.

131. *Sales to public departments.*—The sale of 47,730 sleepers to the Rájputána State Railway and the Rájputána and Málwa State Railway resulted in an estimated profit of Rs. 11,390. One hundred and twenty-three sleepers were sold at cost price to the Gun Carriage Factory at Fatehgarh.

The results of sales to public departments during the last three years are as follow:

Years.	Sleepers.			
	Cubic feet.	Revenue	Cost.	Surplus.
		Rs.	Rs.	Rs.
1879-80	152,993	1,83,321	95,884	87,437
1880-81	58,112	85,420	65,891	19,529
1881-82	64,072	90,046	78,656	11,390
Total	275,177	3,58,787	2,40,431	1,18,356

132. *Free grants to villagers.*—The following list shows the trees granted to villagers in Jaunsár Báwar :—

Deodar trees, green	4
Dry deodar pieces	120
Firs and pines	135
Oaks	6

and the following were granted in the Native States, *viz.* :—

Deodar trees, green	98
Deodar trees, dry	4
Dry deodar pieces	1,136
Firs and pines	7,172

Of this large number 72 deodars and 6,870 firs and pines were granted to the people in Bashâhr, who had very few trees for the two previous years. The trees in Bashâhr are as a rule small and the houses are exceptionally substantial, while the Inspector-General recommended that applications should be liberally met; but it is unlikely that the number stated was actually cut.

133. *Manufacture of iron.*—Dr. Warth visited the division with a view to investigating its iron resources, but he has not as yet discovered any mines which could be worked profitably.

134. *Wire tramway at Deota.*—Dr. Warth also endeavoured to erect a wire tramway for the transport of sleepers from the Deota forest to the head of the slide; but in this, the first attempt of the kind in this Circle, he was not completely successful. Further endeavours in this direction will be made.

135. *Scourage of sleepers while floating down the Jumna.*—In continuation of the experiment reported last year, 103 sleepers, each $6\frac{1}{4}' \times 8\frac{1}{4}'' \times 4\frac{1}{4}''$, were marked before being launched at Thadiâr; only 18 of them were measured at Delhi, and the average size of these was $6{\cdot}223' \times 8{\cdot}17'' \times 4{\cdot}20.''$ The conclusion arrived last year, *viz.*, that to land a sleeper $6' \times 8'' \times 4''$ at Delhi, it is sufficient to cut it $6\frac{1}{4}' \times 8\frac{1}{4}'' \times 4\frac{1}{4},''$ is confirmed.

136. *Floating operations in the Tons and Jumna.*—During the cold weather Mr. Moir submitted a report on the proposal to bring the rules under section No. 41 of the Forest Act into force on the Tons and Jumna rivers. The property marks of private traders were registered, launching passes were issued, depôts fixed upon, and an establishment sanctioned; but as the whole question is under reconsideration by Government, it is not considered necessary to enter into more details in the present report. A question arose as to the rights of the Maharâja of Sirmur on the river, and this question is also under consideration by Government

Financial Results.

137. *Receipts, charges, and surplus.*—The following statement shows the receipts, charges and surplus so distributed as to give the results of the transactions under the three main heads during the last three years:—

Years.	*Departmental timber operations.*				*Other revenue.*				*Formation, protection, and improvement of forests.*	*Total.*			
	Receipts.	Charges.	Surplus.	Deficit.	Receipts.	Charges.	Surplus.	Deficit.	Charges.	Receipts.	Charges.	Surplus.	Deficit.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80,	1,83,749	86,913	96,836	...	335	1,837	...	1,502	20,424	1,84,084	1,09,174	74,910	...
1880-81,	89,562	63,188	26,374	...	469	643	...	174	13,161	90,031	76,992	13,039	...
1881-82,	91,492	2,06,942	...	1,15,450	12,258	1,254	11,004	...	17,294	1,03,750	2,25,490	...	1,21,740
Average,	1,21,601	1,19,014	2,587	...	4,354	1,245	3,109	...	16,959	1,25,955	1,37,218	...	11,263

The deficit was Rs. 1,21,740, which, as compared with the surplus (Rs. 13,039) of the previous year, shows a difference of Rs. 1,34,779 against the Department. The revenue was increased by Rs. 13,720, of which Rs. 1,930 were on account of timber removed by Government agency ; this is due to the sale of a larger number of sleepers. Rs. 5,620 were on account of timber removed by purchasers, due to the sale of standing deodar trees from the Kotigádh, and of chír trees from the valley of the Tons; Rs. 5,521 were on account of river dues, and the remaining Rs. 649 are made up of increases on various items.

The expenditure exceeded that of the previous year by Rs. 1,48,499. Of this sum Rs. 1,41,283 were under the head of timber removed by Government agency ; this large increase is mainly due to the settlement of Messrs. Winton and Braidwood's accounts. Rs. 816 additional were spent on buildings ; this increased expenditure was caused by the erection of new out-houses at Deota and Lambatách, and to the fact that the charges for annual repairs were unusually small during the preceding year. An additional sum of Rs. 534 was spent on plantations, which were undertaken on a much larger scale than during 1881-82. The pay and allowances of superior officers cost an additional sum of Rs. 5,309; and the balance, or Rs. 557, is made up of increases and decreases on other items.

138. *Export of sleepers.*—There is not much demand at present for the sleepers exported from the Government forests, and the railway authorities appear to prefer to obtain their supplies from private sources. The Rájputána Railway is said to have a very large stock of Norwegian pine sleepers on hand, and the merchants have large stocks of Himalayan sleepers ; so that the prices realized last year are low, being never more than Rs. 4 for a 1st class broad-gauge sleeper, and Re. 1-14-0 for a 1st class metre-gauge sleeper. Mr. Moir has heard that sleepers of deodar and other kinds of wood, including Norwegian pine and teak, and also iron sleepers, are laid down on various sections of the Rájputána line. He believes that the iron sleepers get out of order, and that teak and pine sleepers do not last very long; so that, as deodar is much cheaper than either of them, he hopes that there may again be a brisk demand for sleepers of the last-named kind. He gives figures regarding the profit to the Department on the last batch of metre-gauge sleepers exported from Deota, which seem to show that the cost of a metre-gauge sleeper, including felling, logging, sawing, carriage, loss on food supply, temporary establishment, and miscellaneous charges amounted to Re. 1-6-1, while the average receipts were Re. 1-12-5, thus showing a profit of 6 annas and 4 pie. But in this account there is no allowance for buildings, roads, slide, or proportion of general charges.

139. *Outstandings on account of contractors and disbursers.*—The outstandings at the commencement of the year were Rs. 95,270, while at the close of the year they were only Rs. 5,227 ; the difference being due to the adjustment of Messrs. Winton and Braidwood's advance of Rs. 90,010.

140. *Outstandings on account of revenue.*—The outstandings were under Re. 1.

141. *Stock.*—(*a*) *Timber and other produce.*—The value has been increased by Rs. 1,00,584, which is almost entirely due to the sleepers purchased from Messrs. Winton and Braidwood.

(*b*) *Live and dead stock.*—The value has been increased by Rs. 2,642, due to the purchase of a bungalow in the Raingarh forest, additions to existing buildings, and purchases of tools, instruments and furniture.

DIRECTION DIVISION.

Protection and Improvement.

142. *Roads.*—Repairs to roads and paths within the school compound cost Rs. 69.

143. *Buildings.*—The expenditure on buildings was as follows :—

	Rs.
Additional payment to the Public Works Department for completion of repairs to school buildings	7,212
Laboratory	1,472
Additions and alterations to main and out buildings ...	1,631
Petty repairs and coloring	663
Matting	795
Total ...	11,773

144. *Forest garden.*—In order to facilitate the instruction of students during the theoretical course, large nurseries were established in the school compound, some of which were devoted to indigenous and others to exotic trees. The vigour of the indigenous as compared with the exotic plants is very noticeable, but as it is desired to grow specimens of all the principal Indian forest trees, special care will in future be bestowed on the exotics. Many of the seedlings have been planted out in the compound, and the remainder will be removed to the new plantation at Rámgarh. The expenditure on the nurseries was Rs. 907.

Financial Results.

145. *Receipts, charges and surplus.*—The following statement gives the receipts and expenditure so distributed as to show the results of the transactions under the three main heads during the last three years :—

Year.	*Departmental timber operations.*				*Other revenue.*				*Formation, protection and improvement of forests.*	*Total.*			
	Receipts.	Charges.	Surplus.	Deficit.	Receipts.	Charges.	Surplus.	Deficit.	Charges.	Receipts.	Charges.	Surplus.	Deficit.
		Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.		Rs.
1879-80 ...	...	8,524	...	8,524	...	2,841	...	2,841	38,015	...	49,380	...	49,380
1880-81 ...	...	12,538	...	12,538	14	4,851	...	4,837	18,329	14	35,718	...	35,704
1881-82 ...	...	38,342	...	38,342	175	7,048	...	6,873	18,221	175	63,611	...	63,436
Average,...	...	19,801	...	19,801	63	4,913	...	4,850	24,855	63	49,569	...	49,506

The deficit amounted to Rs. 63,436, as compared with Rs. 35,704 during the previous year. The revenue of Rs. 175, which was derived from sale of fruit, bamboos, and condemned materials, exceeded that of the previous year by Rs. 161. The expenditure exceeded that of the previous year by Rs. 27,892. There was an increase on stores, tools and plant amounting to Rs. 4,102, of which Rs. 2,165 was for laboratory chemicals and apparatus, and the remainder was cheifly on account of furniture. The additional charge for buildings was Rs. 11,549, which was nearly all spent on the alteration and completion of the school, laboratory and subsidiary buildings. The excess of Rs. 1,534 under A. VIII. *(f)* was due to the establishment of nurseries in the school compound and laying out the garden and grounds. The excess expenditure under the head "Miscellaneous" amounted to Rs. 2,205, of which Rs. 1,302 were on account of books and periodicals, Rs. 255 on account of herbarium and other collections, Rs. 212 on account of laboratory charges. Rs. 225 on account of scientific experiments, and sundry items made up the balance of Rs. 211.

The charges under B.I. (*b*) exceeded those of the previous year by Rs. 8,353, and the addition is thus accounted for : there was an increase on account of pay of superior officers amounting to Rs. 11,653, and on account of the allowance to Mr. Duthie of Rs. 1,400, while the charge on account of pay of probationers were reduced by Rs. 4,700. The charges under B.III. (*f*) exceeded those of the previous year by the sum of Rs. 581, which consists of charges for carriage of books and matting, pay of sweepers and punkah coolies and other miscellaneous items. The excess on other items amounted to Rs. 1,272. The saving on pay and travelling allowances of the Conservator was Rs. 1,704, due chiefly to deductions made from the pay of Major vanSomeren.

146. *Outstandings on account of contractors and disbursers.*—The outstandings at the commencement of the year were Rs. 1,357, while at the close of the year they were only Rs. 578 ; this sum consists of advances of pay to men under instruction, an advance for current expenses to the librarian, advances to contractors, and other small items.

147. *Outstandings of revenue.*—There were no outstandings.

148. *Live and dead stock.*—The value was increased by Rs. 7,660, which is made up as follows :—An elephant valued at Rs. 2,000 transferred from the Dehra Dún Division; furniture to the lecture and class rooms Rs. 2,580; chemicals and chemical apparatus Rs. 2,274 ; tools Rs. 465 ; and sundry items Rs. 341.

CHAPTER III.

Protected, unreserved, and district forests.

149. There are no forests of this class in charge of the Forest Department, but in Dehra Dún there are some tracts which were a few years ago made over to the revenue officers for grants, and the timber on them is still the property of the Department. Mr. Fisher valued the timber on the grant made over to Messrs. Lister and Co. at Rs. 4,992 ; trees to the value of Rs. 2,500 were given to them by Government free of charge, and the balance, or Rs. 2,492, is still due. The timber on the remainder of the land will be valued and sold as soon as possible.

CHAPTER IV.

General Remarks.

150. The Conservator has every reason to be well satisfied with the services rendered by the officers of the superior staff.

151. *Rangers not yet appointed.*—No rangers have been appointed ; the permanent appointments are kept open for passed students of the forest school, and men will be selected as soon as they are available. This question is one of the greatest importance, as until thoroughly qualified rangers are placed in charge of the several ranges which constitute the forest divisions, it cannot be hoped that work will be carried on in a manner suitable to the special requirements of this Circle ; at present the time of the divisional officers is a great deal too much occupied with work that should, properly speaking, be disposed of by the rangers. The work of practical instruction to the students at the school would be much facilitated by the appointment of a good staff of rangers, and there is no doubt that their pay would speedily be covered by an increase in the revenue.

152. *Services of the forest establishment. Foresters.*—Complaints are made by all divisional officers regarding the inefficiency of their foresters. Mr. Fisher represents that his four permanent men are all old, two of them being too infirm for their work,

but not having long enough service to entitle them to pension, while another of them cannot read and write. In order to enable him to provide for the charge of the eight forests which he has formed, he was allowed a grant from the funds at the disposal of the Conservator, from which two additional foresters on Rs. 15 and Rs. 16 per mensem were appointed, and the junior office munshi and a senior forest guard were employed temporarily in charge of the remaining two forests. All men in charge of forests in the Dún were provided with order books, marking hammers, measuring tapes, and dies with numbers for marking trees, and since their number has been increased the work has been more efficiently performed. In the Saháranpúr Division there are only two foresters for the charge of the three ranges; and Mr. Lowrie reports that, although they are by no means intelligent, they have done their best. Mr. Hearle complains of the want of men for the efficient superintendence of his work, and Mr. Moir says that he has only one competent man. Unless the pay and prospects of the foresters can be improved by the grant of a sufficient allotment to enable deserving men to be promoted to the higher grades, it is feared that it will be impossible to provide an establishment of really efficient men.

Forest guards.—The forest guards are also by no means as efficient as they should be, some of them being physically unfitted for their work, but unfortunately not entitled to pension. It is feared that cases of dishonesty are not infrequent among them, and in the Dún Division four men have, during the year, been sentenced to terms of imprisonment. Mr. Lowrie also complains of the dishonesty of his guards, most of whom, though employed throughout the year, are on the temporary establishment list; while Mr. Moir says that with a better class of men he could get on with a smaller establishment. There is no doubt that the pay and prospects of these men should be improved, provision being made for the appointment or promotion of some men to the higher grades, while no man should receive less than Rs. 6 per mensem; the scale of establishment should be revised, and a large proportion of it that is now temporary should be made permanent. These measures would enable a better and more educated class of men to be obtained, and, as a consequence, work would be more efficiently and honestly performed and revenue would be increased. Two guards died during the year, one was killed by an avalanche, and two were dismissed for neglect of duty.

153. *Office establishment.*—The establishment has worked well. The senior munshi of the Dún Division died, and his place was filled by the promotion of the next senior man. The work in Mr. Fisher's vernacular office has been considerably reduced by the institution of order books for the men working in the forests, and it has thus been found possible to employ one of his munshis temporarily as a forester. Mr. Fisher has made an excellent arrangement by which all revenue is now paid directly into the treasury, daily receipts being taken in a book, and a consolidated receipt being obtained at the end of the month; the clerk receives a small advance for petty expenditure; work and money responsibility are much reduced by these arrangements.

154. *Work done in the forests by students at the forest school.*—Several students were employed in the Forest Divisions during the year, and rendered valuable assistance in the work. Among these Babu Karuna Nidhan Mukerji, probationer, should be mentioned. He was employed in the Dehra Dún Division, chiefly on fire conservancy, of which he had charge during 1881, and he also superintended the plantations and road and building work, and conducted several criminal cases; his work was all done extremely creditably.

155. *Native non-commissioned officers.*—No men of this class have been appointed.

156. *Uniforms and badges.*—Proposals are under consideration for providing the forest establishment with a suitable dress, which is very necessary for them; the arrangement will be more feasible as soon as the pay and prospects of the men are improved, for at present the pay of most of them does not admit of their dressing respectably. In Dehra Dún all foresters and forest guards have been provided with metal badges to indicate their office, and the badges of the forest guards are numbered.

157. *Connection with civil district officers.*—The system prevailing in Oudh, under which the Forest Divisional Officer is in some respect subordinate to the Collector, has been adopted as an experiment in the Saháranpur Division; the arrangement has so far worked fairly well, but some improvements are required in order to make the system a complete success.

158. *Relations between the people in the villages on the borders of the forest and the forest officials.*—On the whole, the relations between the forest officials and the people are good; the forests have most of them been demarcated for some years, and the neighbouring inhabitants are becoming used to the restrictions imposed by forest conservancy. In Bashahr however, where demarcation is in progress, the department is by no means popular. Some difficulties have also occurred with the Jagirdár of Raiengarh, but relations with him are more friendly than they were formerly.

159. *Native shikaris and wild animals.*—As a rule *shikaris* have not given much trouble within British territory in any of the divisions, but five of them were prosecuted during the year. The slaughter of moonál pheasants and of game in the snow is continued in Tehri-Garhwál and Bashahr, and it is to be regretted that no action to prevent this can be taken under the Rules relating to the Native States. Notifications have however been issued by the Conservator under the Rules relating to forests in British territory and published in Government Notification No. 303 of the 28th February, 1880, closing certain forests against hunting, shooting and fishing between certain dates in each year; closing all reserved forests against the hunting and shooting of certain classes of animals at specified seasons; and regulating the use of fishing nets. The valley of the Khunigádh has been the haunt of two or three tigers which have given some trouble, and which it has not hitherto been found possible to kill. Some of the villagers in the Tons Division have complained of not being able to kill game which injures their crops, and this matter will be investigated; but, so far as can be judged, forest conservancy has not produced an increase in wild animals of a destructive class. No doubt the closing of a large area in the Dún for a part of the year affords shelter for the deer, which have been much shot down of late years; but the sepoys of the Goorkha regiment and European sportsmen kill large numbers in the open forests and on private lands, and complaints have not been received of any damage done by deer.

160. *System of grazing and collection of grazing dues.*—The system now in force in the Dún and Saháranpur has not been found to answer so well as was expected. In the Dún it is desired to revise the list of villages the inhabitants of which are allowed to graze their cattle at the lower rates, and also to do away with the rule under which privileged villages are only allowed to graze a fixed number of cattle at the lower rate; and the people further object to pay for the whole of the cattle in the village, and desire to pay only for those which they say make use of the forest for pasturage. Much the same complaints are made in Saháranpur. The question is a very difficult one, but the Conservator is in correspondence with the Commissioner on the subject, and it is hoped that it may be possible to make a better arrangement during 1882-83. No difficulties have been met with in Jaunsár; but on the Tons, specially in the Jaunsár and Bashahr portions, there are loud complaints that the number of buffaloes brought up yearly by Gujars is largely increasing, and serious affrays between the villagers and the graziers are not uncommon; the villagers assert that the buffaloes destroy their crops and introduce disease among their cattle, while tigers have followed the buffaloes, and have become more numerous than they used to be. Endeavours will be made to curtail the number of buffaloes coming to the hill forests.

161. *Chief purchasers of produce and suitability of the class of timber produced to meet the demands of the public.*—In the Dún and Saháranpur Divisions large quantities of firewood, bamboos, and minor produce are disposed of locally to the inhabitants living in the neighbourhood; while merchants from Dehra, Jowálapur, Saháranpur, and

Meerut have been the principal purchasers of timber, which is chiefly of small size, suitable for native house-building purposes, and there is a ready sale for it. Timber of large size is much wanted for European houses, but trees of suitable size and description are not now to be found in the forests. As before stated, the felling of green trees in the Saháranpur Division must practically cease for some time. In the Jaunsár and Tons Divisions there is but little sale of anything but timber and firewood, for which there has hitherto been small demand except by public departments; the Jaunsár Division supplies the Chakráta Cantonment with building timber and fuel, while the Tons Division has cut deodar sleepers for the State Railways. It is hoped that in the course of time a steady demand may be made by private merchants for firs and pines, of which there are considerable quantities available. Two experimental consignments of boxwood have been sent to England.

162. *Annual plans of operations.*—Annual plans of operations were drawn up for the guidance of divisional officers, and they were found most useful.

163. *Working plans.*—The Working Plan Division under Mr. Fernandez was again employed entirely in the Central Circle, and a separate memorandum on the work accomplished by it is appended to the present report.

164. *Record of reserves.*—It is to be regretted that the record is still incomplete. The preparation of the detailed description of boundaries and boundary marks is a long and tedious operation, and in the case of the Dún and Saháranpur forests it was found that in many instances the pillars were too far apart, and it was necessary to erect intermediate ones; the pillars have also to be numbered throughout; but it is hoped that the work will be completed during 1882-83. There will be two volumes for each division:—

Vol. 1.—An atlas containing the maps and an area statement.

Vol. 2.—A detailed description of boundaries and marks, a record of rights, and an area statement.

The Deputy Superintendent of Forest Surveys will be requested to superintend the preparation of the atlas and description of boundaries and boundary marks. A specimen of the description of boundaries and boundary marks is given in the appendix.

165. *Forest legislation.*—As above stated, notifications regarding hunting, shooting and fishing in the reserved forests have been issued by the Conservator under the Rules published in Government Notification No. 303, dated 28th February, 1880. Action was also taken on the rules framed last year under section 41 of the Forest Act (Transport by river) with a view to control the export of timber by the rivers Jumna and Tons; and the question of the arrangements to be made is still under consideration by Government.

166. *Legal documents.*—Model deeds have now been issued to serve as guides when making agreements of the undermentioned kinds, *viz.*:—

i. Carrying fuel in the hills.
ii. Farming the revenue on minor forest produce.
iii. Floating sleepers.
iv. Sale of standing trees—
  (*a*) In the hills.
  (*b*) In the plains.
v. Cutting fuel in the hills.
vi. Supply of food in the hills.

167. *Timber marks.*—Divisional officers have been permitted to use some discretion in respect of the system of marking timber and other produce, with a view to the development of a more perfect arrangement than that at present in force.

168. *Measurements of trees on sample plots.*—With a view to detemine the rate of growth of trees of various kinds (principally sál) and the annual production of wood per acre, two plots in the Dún—one at Phandawála and one at Lachiwála—were selected by Mr. Brandis; these were demarcated and protected from fire. Suppressed trees were removed, and the trees left were carefully marked and measured on the 1st December by Mr. Fisher, assisted by native probationers and apprentices; the measurements were recorded in a book, and will be repeated half-yearly. Two one-acre plots were also selected in the Saháranpur Division—one at Dholkand and one at Lakarkot—and they were similarly treated, but the measurements had not been made at the close of the year.

169. *Reducing factor for deodar.*—In accordance with instructions given to him by the Conservator, Mr. Moir measured 11 trees of various girths in the Dopta and Temple Blocks of Deota, with a view to determine the proportion of the total cubic contents of such trees that can be utilized as sleepers; representative trees of each girth class were selected, but it is to be regretted that a larger number of trees could not be measured. Mr. Moir explains that owing to the exceptionally precipitous nature of the ground many trees were damaged in falling, and that he was compelled to be in another part of his division during most of the time that the fellings were in progress. The following table shows the results of the measurements :—

Number of trees.	Girth.	Average total cubic contents of tree (including branches) in solid cubic feet.	Average number of good metre-gauge sleepers, 6½′ × 8½″ × 4½″	Cubic content of sleepers.	Cubic content of waste wood.	Reducing factor or proportion between 5th and 3rd columns.
	Feet.					
2	5	92	20½	33	59	·36
2	6	160	16	24	136	·15
2	7	174	38	57	117	·32
1	8	217	61	91	126	·42
2	9	233	93½	139	94	·60
1	10	370	91	135	235	·37
1	12	622	206	306	316	·50
Total and averages, 11	$7\frac{7}{11}$	242	63	94	148	·39

The results are interesting, but they are somewhat discordant, and it is evident that a larger number of trees must be measured. Mr. Moir rightly calls attention to the fact that the waste in the case of small trees is greater than in the case of large ones, and that this is due to the greater proportion of sapwood which they contain, and to the large percentage taken up by slabs. Some plan must be devised for utilizing the very large proportion of the trees which is now wasted and lies upon the ground, to the great injury of the forest both as regards fires and natural reproduction. The price of 1st class sleepers is now so low that it would not pay the department to export sleepers of inferior quality; the rejected sleepers and other wood of useful sizes have been offered for sale, but all tenders included the use of the slide, and the rates offered were so low that it was thought that they would not compensate the department for the wear and tear on it. Endeavours are being made to start the manufacture of iron, but success has not yet been attained; and the question of extracting tar or potash will also be considered. An effort was made to open a market for tai resin at Ajmere, but without success.

170. *Counting of annual rings of deodar.*—The annual rings of 45 deodár stumps in the Dopta, Katatách, and Temple blocks of Deota were carefully counted by Messrs. Moir and Bryant, and the following table gives the result of their work :—

Block.	Number of trees.	Average age.	Average radius.	Number of rings.											
				0 to 2″	2″ to 4″	4″ to 6″	6″ to 8″	8″ to 10″	10″ to 12″	12″ to 14″	14″ to 16″	16″ to 18″	18″ to 20″	20″ to 22″	22″ to 24″
		years.	Inches.												
Dopta ...	29	149	14¾	22	17	18	17	19	22	20	21	24	19	12	...
Katatách ...	1	102	10¼	17	18	14	20	23	10	...	...	...	...	...	...
Temple ...	15	149	15	26	18	18	18	17	19	20	21	18	33	20	23
Total and averages,	45	148	14¾	28	17	18	18	18	21	20	21	22	25	16	23

In the Dopta block, which is rocky and precipitous, several trees of 16 inches to 19 inches in radius, and 159 to 173 years old, were found to be hollow in the centre; while in the Temple block, where the soil is deep and good, trees of 20 inches radius and 250 years old were quite sound.

171. *Specimens of wood, bark, leaves, and soil for the French Forest School.*—A collection, similar to that sent during the previous year from the Dehra Dún and Jaunsár Divisions, was sent by Mr. Moir from the Tons Division. The receipt of these collections has not been acknowledged.

172. *Supply of seeds.*—46 lb. of seeds of 12 different kinds were collected in the Dún Division and despatched to various officers. The year was a good one for deodar seed, and indents amounting to 240 lb. have been supplied from the Jaunsár Division. Of this quantity 160 lb. were sent to the Saháranpur gardens, 64 lb. to the Agra gardens, and 11 lb. were sent to Trieste for the Austrian Government. 9 lb. of other kinds of seed were supplied from this division to various persons. 6 lb. of seeds were collected in the Tons Division for the Austrian and Italian Governments.

173. *In what direction changes or improvements are called for.*—This question has been dealt with in detail under the various heads of the report; but it may here be briefly stated that the principal improvement demanded is in the establishment of all divisions, which is without doubt by no means competent to discharge the duties now required of it. The grazing arrangements in the Dún and Saháranpur must be revised; the control of the floating work on the river Jumna must be organized; endeavours must be made to find a market for the fir and pine trees in the hill divisions, and to dispose of the refuse wood lying in the forests by the manufacture of iron, tar or potash. The record of reserves must be completed.

174. *Ajmere forests.*—During the cold season, when no work of importance was going on in the Tons Division, Mr. Moir proceeded to Ajmere and Merwára. He remained there from the beginning of January to the end of March, and has submitted a report containing proposals regarding the management of the forests in that district.

175. *Hill States of the Panjab.*—Mr. Moir visited the Jubal forests in the spring, and spent the greater part of April, May, and June in them. He submitted a report in August.

176. *Visit by the Inspector-General of Forests.*—Mr. Brandis, accompanied by Dr. Schlich, arrived at Hardwár on the 1st April and proceeded to inspect the forests of the Saháranpur and Dehra Dún Divisions. He left Dehra for Jaunsár and the Tons on the 25th April, and quitted the Tons Division about the 20th May. He has written an Inspection Report which is now taken as a guide in all matters connected with the administration of the forests. Major Bailey accompanied Mr. Brandis until the 13th May, and he remained in the Tons and Jaunsár Divisions until the end of June. Major van Someren inspected the Dehra Dún and Saháranpur Divisions during the winter.

ANNUAL STATEMENTS.

ANNUAL FORM No. 49.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Area of Reserved and leased Forests, 1881-82.

Division or range.	Civil district or territory.	Name of forest.	*Area on 1st April*, 1881. Acres.	*Area on 1st April*, 1881. Equivalent in square miles.	*Added during the year.* Acres.	*Excluded or transferred to other heads.* Acres.	*Area on 31st March*, 1882. Acres.	*Area on 31st March*, 1882. Equivalent in square miles.	Number and date of notification of addition or transfer.	Remarks.
15B Dehra Dún Division. Western Range...	Dehra Dún ...	Ambári	4,203	7	...	...	4,203	7		
		Chándpur	2,251	3	...	...	2,251	3		
		Dholkot	4,826	8	...	...	4,826	8		
		Jumna	9,213	14	...	...	9,213	14		
		Timli	19,723	31	...	...	19,723	31		
		Sherpur	13,935	22	...	...	13,935	22		
Central Range ...	Dehra Dún ...	Chandrabani	7,287	11	...	...	7,287	11		
		Balindawála	11,247	18	...	...	11,247	18		
		Bulawála	14,837	23	...	...	14,837	23		
		Nágsidh	14,725	23	...	...	14,725	23		
Eastern Siwálik, Range.	Dehra Dún ...	Kánsrau	19,630	31	...	...	19,630	31		
		Motichur	22,671	35	...	...	22,671	35		
Eastern Dún Range.	Dehra Dún ...	Málkot	5,790	9	...	...	5,790	9		
		Tháno	8,937	14	...	...	8,937	14		
		Tirsál	9,112	14	...	...	9,112	14		
		Sainkot	9,392	15	...	...	9,392	15		
		Total Dehra-Dún Division ...	1,77,779	278	...	...	1,77,779	278		
Saháranpur Division. Eastern Range, Central Range, Western Range	Saháranpur ...		21,189 / 13,896	55	...	34	35,051	55	...	34 acres erroneously included within Majhára and Jowálapur blocks has been struck out.
			80,040	125	...	...	80,040	125		
			75,571	118	...	...	75,571	118		
		Total Saháranpur Division ...	1,90,696	298	...	34	1,90,662	298		

ANNUAL FORM No. 49.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Area of Reserved and leased Forests, 1881-82.

Division or range.	Civil district or territory.	Name of forest	Area on 1st April, 1881.		Added during the year.	Excluded or transferred to other heads.	Area on 1st March, 1882.		Number and date of notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
Jaunsár Division.										
Southern Range ...	Dehra Dún ...	Kálsi	4,576	7	...	...	4,576	7		
		Strips on Jumna and Tons ...	165	...	...	...	165	...		
		Bairát	291	...	...	...	291	...		
		Amláwa	402	...	...	...	402	...		
	Tiri-Garhwál ...	Rawai	1,600	3	...	...	1,600	3	...	Areas approximate.
		Jaunpur	1,280	2	...	...	1,280	2	...	
Deoban Range ...	Dehra Dún ...	Lokandi	6,975	11	...	...	6,975	11		
		Deoban	6,579	10	...	...	6,579	10		
		Ekra	5,313	8	...	...	5,313	8		
		Karámba	11,842	19	...	...	11,842	19		
		Konain	4,654	7	...	...	4,654	7		
Báwar Range ...	Ditto ...	Riknár	6,450	10	...	...	6,450	10		
		Dhárागádh	13,518	21	...	...	13,518	21		
		Dhármigádh	10,010	16	...	...	10,010	16		
		Bástil	3,085	5	...	...	3,085	5		
		Total Jaunsár Division ...	76,740	119	...	...	76,740	119		
Tons Division.										
Deogár Range ...	Dehra Dún ...	Deogár	11,238	17	...	...	11,238	17		
	Jaghirs ...	Raiengarh	2,560	4	...	...	2,560	4	...	Areas approximate.
		Ládi	960	2	...	...	960	2	...	
Deota Range ...	Dehra Dún ...	Kunigadh	11,979	19	...	...	11,979	19		
	Tiri-Garhwál ...	Deota	5,087	8	...	...	5,087	8		
		Bámsu	2,223	3	...	...	2,223	3		
		Surás	997	2	...	...	997	2		
		Báshta	1,190	2	...	...	1,190	2	...	Areas approximate.
		Dátmir	2,560	4	...	...	2,560	4	...	
Lambatách Range,	Ditto ...	Lambatách	2,963	5	...	...	2,963	5		
		Kotigádh	4,112	6	...	...	4,112	6		
Basháhr ...	Basháhr ...	Basháhr	...	...	1,430	...	1,430	2	...	Area approximate.
		Total Tons Division ...	45,869	72	1,430	...	47,299	74		
		GRAND TOTAL ...	491,084	767	1,430	34	492,480	769		

ANNUAL FORM No 50.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Area of Plantations, 1881-82.

Division.	Name of plantation.	On 1st April, 1881		Added during 1881-82.		On 31st March, 1882.		Remarks.
		Area.	Cost.	Area.	Cost.	Total area.	Total cost.	
		Acres.	Rs	Acres	Rs.	Acres.	Rs	
Dehra Dún ...	Phandawála ... Sál	...	...	6	275	6	275	Five acres shown last year with a total cost of Rs. 329 having entirely failed has been omitted.
	Phandawála ... Sissoo	...	...	4	103	4	103	
	Phandawála ... Tun	...	...	1	34	1	34	
	Landour cantonment	50	2,767	40	625	90	3,392	Funds provided by the Military Department.
	Total ...	50	2,767	51	1,037	101	3,804	
Saháranpur ...	Shámansur (Khair and sissoo)	4	136	2	118	6	254	
	Firozpur (chiefly sissoo)	*62	217	10	38	72	255	* Erroneously stated to be 75 acres in last report.
	Rasulpur (Khair and sissoo)	5	17	...	...	5	17	
	Kálushahid (Bamboos)	5	31	3	110	8	141	
	Gunjarban ... Khair	20	31	...	34	20	65	
	Gunjarban ... Sál	...	...	1	15	1	15	
	Total ...	96	432	16	315	112	747	
Jaunsár ...	Kathián (Deodar)	229	2,947	...	...	229	2,947	
	Konain ditto	106	2,324	6	69	112	2,393	
	Kanásar (Deodar, blue pine)	139	1,656	...	...	139	1,656	
	Bodyar ditto ditto, spruce)...	367	4,005	6	133	373	4,138	
	Kurwa (Oak)	15	163	...	...	15	163	
	Deothát (Deodar, spruce, blue pine, kharsu, chestnut) ...	144	1,850	21	615	165	2,465	
	Mátkángra (Moru)	51	699	...	...	51	699	
	Thona (spruce)	4	732	...	...	4	732	
	Lurli (Oak, deodar, blue pine)	...	...	10	136	10	136	
	Total ..	1,055	14,876	43	953	1,098	15,329	Exclusive of Rs. 75 spent on oak coppice, and Rs. 725 spent on the Chakráta garden and erroneously charged to A. viii d.
Tons ...	Deota (Deodar, blue pine)	...	...	17	263	17	263	Eleven acres costing Rs. 394 reported last year at Mandhol having turned out a complete failure have been omitted.
	Lambatách (Deodar, blue pine)	...	...	25	172	25	172	
	Deogár (Deodar)	...	...	8	99	8	99	
	Total ...	...	...	50	534	50	534	
	GRAND TOTAL ...	1,201	17,575	160	2,839	1,361	20,414	

FORM No. 51.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Area of forest tracts protected from fire during the dry season of 1882 (*to accompany report for* 1881-82).

Division.	Forest tracts.	Up to 15th June, 1881. Area actually protected.	Up to 15th June, 1881. Total cost.	During dry season of 1882. Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 15th July 1882.	Year in which protection commenced.	Remarks.
		Acres	Rs.	Acres.	Acres.	Acres.	Rs	Rs.		
Dehra Dún	Bulawála	8,405	9,869	11,645	1,707	9,938	1,430	11,299	1872	
	Balindawála	6,336	959	6,512	...	6,515	733	1,692	1878	
	Tháno	6,339	2,777	6,400	1,946	4,454	829	3,606	1877	
	Chandrabani	4,711	1,320	4,717	...	4,717	659	1,979	1878	
	Kansrau — Dáluwála	...	...	1,630	203	1,427	962	2,234	1878	
	Kansrau — Bahera	1,574	1,272	8,038	...	8,038			1881	
	Total	27,425	16,197	38,942	3,856	35,086	4,613	20,810		
Saháranpur	Lakarkot, Gunjarban and Rasulpur	8,504	2,613	8,504	...	8,504	522	3,135	1879	
	Dholkhand, Málawála, portions of Bám and, Andheri	10,045	690	10,080	...	10,080	387	1,077	1880	
	Chillawála, Gaj, portions of Andheri, Bám and Betban,	...	...	15,907	...	15,907	465	465	1882	
	Kalushahid	755	460	1,000	...	1,000	209	669	1879	
	Patri Plantation	75	128	75	40	35	30	158	1880	
	Daula	600	372	600	...	600	147	519	1879	
	Total	19,979	4,263	36,166	40	36,126	1,760	6,022		
Jaunsár	*Southern Range.*									
	Kálsi, Bairát and Amláwa	2,500	309	2,500	15	2,485	...	309	1872	
	Cantonment Blocks, Forest Garden	627	24	630	...	630	73	97	1880	
	Rawai and Jaunpur	2,880	97	2,880	...	2,880	14	111	1872	
	Deoban Range.									
	Lokandi	5,132	446	5,132	...	5,132	56	502	1869	
	Deoban	5,762	300	5,775	...	5,775	92	392	1872	
	Ekra	2,670	432	2,670	...	2,670	87	519	1872	
	Konain	3,780		3,780	...	3,780				
	Karámba	3,878		3,878	...	3,878				
	Báwar Range.									
	Riknár	4,200	838	4,600	...	4,600	224	1,062	1872	
	Dhárágádh	4,800		4,000	...	4,000				
	Dharmigádh	1,200		1,200	...	1,200				
	Bastil	1,269		1,269	...	1,269				
	Total	38,698	2,446	38,314	15	38,299	546	2,992		
Tons	Dátmir	2,560	129	2,560	...	2,560	19	148	1872	
	Kunigádh, Molta, and part of Chátra	3,026	681	3,226	...	3,226	118	799	1872	
	Deogár including Raiengarh and Dádi	8,495	715	8,495	122	8,373	115	830	1872 / 1879	Raiengarh and Dádi closed from 1879.
	Deota including Bámsu, Surás, Báshla, Lambatách, and part of Kotigádh.	12,468	1,138	12,721	1,616	11,105	404	1,542	1872	
	Bashahr	...	...	1,430	12	1,418	18	18	1881	
	Total	26,549	2,663	28,432	1,750	26,682	674	3,337		
	GRAND TOTAL	112,651	25,569	141,854	5,661	136,139	7,593	33,162		

		Rs.
Charged in previous years	... ...	25,569
" " 1881-82	... ...	4,236
" " 1882-83	... ...	3,357
Total	...	33,162

ANNUAL FORM No. 52.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Prosecutions for breaches of Forest Rules during 1881-82.

Forest Division and Civil District.	Cases pending from 1880-81	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Dehra Dún District.														
Dehra Dún Division...	* 1	...	3	...	6	9	10	7	7	3	12	10	19	...
Jaunsár „	...	4	21	8	11	44	44	30	59	11	18	41	77	3
Tons „	...	...	...	...	1	1	1	1	1	...	3	1	4	...
Sahárunpur District.														
Sahárunpur division	...	...	6	...	...	6	6	5	18	1	16	6	34	...
Native States.														
Tons division	...	1	5	...	2	8	8	7	9	...	...	7	9	1
Total ...	1	5	35	8	20	68	69	50	94	15	49	65	143	4

* One case pending at the end of last year omitted from the return of that year.

ANNUAL FORM No. 53.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Summary of revenue of the different divisions during 1881-82.

Budget heads—Receipts.	Direction Division.	Dehra Dún Division.	Saháranpur Division.	Jaunsár Division.	Tons Division.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency :—						
(a) Timber	...	81 6 0	...	3,869 11 4	91,491 10 6	95,442 11 10
(b) Firewood and charcoal	...	148 11 0	...	33,313 0 1	...	33,461 11 1
(c) Bamboos	...	...	46 2 9	...	...	46 2 9
(d) Sandal-wood	...	...	...	...	...	...
(e) Grass and other minor produce	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers :—						
(a) Timber	...	36,412 6 4	8,505 2 8	681 3 8	5,621 2 0	51,219 14 8
(b) Firewood and charcoal	...	2,934 11 0	4,986 13 6	599 0 7	...	8,520 9 1
(c) Bamboos	...	5,301 5 6	3,528 3 11	177 2 0	...	9,006 11 5
(d) Grazing and fodder grass	...	9,826 9 0	13,922 3 3	1,062 10 0	320 13 0	25,132 3 3
(e) Other minor produce	...	5,475 4 9	5,739 8 11	261 1 0	...	11,475 14 8
III.—Confiscated, drift and waif wood	...	3,595 11 10	1,346 4 0	33 6 0	150 0 0	5,125 5 10
IV.—Revenue from forests not managed by Government :—						
(a) Duty on foreign timber and other forest produce	...	...	...	...	5,521 3 11	5,521 3 11
(b) Revenue from shared and private forests	...	...	...	...	...	...
V.—Miscellaneous :—						
(a) Fines and forfeitures	...	1 4 6	116 5 0	108 2 0	113 9 0	339 4 6
(b) Refunds	2 10 11	19 10 0	...	200 0 0	338 11 8	561 0 7
(c) Other sources	172 7 0	271 5 0	45 0 0	4,376 12 3	192 11 0	5,058 3 3
Total, Receipts ...	175 1 11	64,068 4 11	38,235 12 0	44,682 0 11	1,03,749 13 1	2,50,911 0 10

CALCUTTA,
The 13th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Summary of expenditure of the different divisions during 1881-82.

Budget heads.	Direction. Division.	Dehra Dún Division.	Sahárunpur Division.	Jaunsár Division.	Tons Division.	Total.
A.—CONSERVANCY AND WORKS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the forests by Government agency :—						
(a) Timber	...	47 10 0	...	4,233 0 2	2,00,856 5 5	2,05,136 15 7
(b) Firewood and charcoal	...	...	...	22,305 0 5	...	22,305 0 5
(c) Bamboos	...	...	144 12 6	...	...	144 12 6
(d) Sandal-wood	...	...	...	...	...	...
(e) Grass and other minor produce	...	...	...	...	...	...
II.—Timber and other produce removed from the forests by consumers or purchasers	...	616 9 7	5,086 2 8	...	...	5,702 12 3
III.—Confiscated, drift and waif wood	...	34 7 6	186 0 2	...	...	220 7 8
IV.—Revenue from forests not managed by Government :—						
(a) Duty on foreign timber and other forest produce	...	...	...	...	...	...
(b) Revenue from shared and private forests	...	...	...	...	...	...
V.—Rent of leased forests, and payments to shareholders in forests managed by Government	...	1,851 0 0	...	...	6,650 0 0	8,501 0 0
VI.—Live stock, stores, tools and plant :—						
(a) Purchase of cattle	...	...	...	...	...	...
(b) Feed and keep of cattle	470 15 10	883 7 0	654 15 6	...	...	2,019 6 4
(c) Stores, tools and plant	5,440 5 9	1,485 8 8	144 9 6	140 10 0	413 4 0	7,624 5 11
VII.—Communications and buildings :—						
(a) Roads and bridges	69 4 1	2,021 5 6	78 11 7	4,357 0 6	1,136 12 5	7,663 2 1
(b) Buildings	11,773 5 9	1,178 9 2	258 9 9	1,989 13 7	1,238 3 4	16,438 9 7
(c) Other works	425 11 9	...	72 11 3	10 8 0	15 10 0	524 9 0
VIII.—Demarcation, improvement and extension of forests :—						
(a) Demarcation	...	1,929 12 7	95 12 0	329 8 0	183 9 6	2,538 10 1
(b) Compensation for land and rights	...	...	...	...	...	...
(c) Surveys and working plans	...	...	...	4 11 0	1 1 6	5 12 6
(d) Plantations	...	412 7 0	315 9 5	1,753 3 7	534 3 9	3,015 7 9
(e) Protection from fire	...	4,008 10 1	1,921 12 9	595 7 3	572 4 0	7,098 2 1
(f) Other works	1,583 15 1	827 10 0	372 1 1	...	284 11 0	3,068 5 2
IX.—Miscellaneous :—						
(a) Refunds	...	1 4 0	910 0 0	...	...	911 4 0
(b) Law charges	...	199 2 0	...	32 0 0	...	231 2 0
(c) Other charges	2,875 12 10	824 5 11	73 11 0	5,138 10 11	403 1 8	9,315 10 4
Total, A.—Conservancy and Works	22,639 7 1	16,321 13 0	10,325 7 2	40,889 9 5	2,12,289 2 7	3,02,465 7 3

CALCUTTA,
The 13th June, 1882.

(Sd.) A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 53.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Summary of expenditure of the different divisions during 1881-82.

Budget heads.	Direction Division.	Dehra Dún Division.	Saháranpur Division.	Jaunsár Division.	Tons Division.	Total.
B.—ESTABLISHMENTS.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Brought forward, Total A.—Conservancy and Works	22,639 7 1	16,321 13 0	10,325 7 2	40,889 9 5	2,12,289 2 7	3,02,465 7 3
I.—Salaries :—						
(a) Conservators	10,690 5 2	...	...	...	...	10,690 5 2
(b) Superior officers	17,739 5 7	8,600 0 0	1,500 0 0	5,400 0 0	8,000 0 0	41,239 5 7
(c) Subordinate forest and depôt establishments	445 2 7	3,269 3 6	1,018 6 3	2,279 8 3	2,172 0 0	9,184 4 7
(d) Office establishments	3,900 0 0	1,332 0 0	900 0 0	852 6 8	720 0 0	7,704 6 8
(e) Deputation and special allowances	586 1 0	...	...	...	...	586 1 0
II.—Travelling allowances :—						
(a) Conservators	2,317 15 0	...	...	...	...	2,317 15 0
(b) Superior officers	3,355 1 6	1,171 0 0	598 0 0	1,262 0 0	1,770 8 0	8,156 9 6
(c) Subordinate forest and depôt establishments	30 4 6	...	5 10 10	...	...	35 15 4
(d) Office establishments	5 3 2	46 5 5	105 13 10	134 12 4	118 7 6	410 10 3
III.—Contingencies :—						
(a) Stationery	3 7 0	57 13 0	37 14 9	46 8 3	47 10 0	193 5 0
(b) Carriage of tents and records	288 8 11	226 0 2	188 4 8	22 11 0	108 10 0	834 2 9
(c) Rents, rates and taxes	2 4 0	240 0 0	331 2 1	0 9 0	...	573 15 1
(d) Pay of police guards	465 3 6	...	...	...	...	465 3 6
(e) Official postage	307 2 6	70 8 0	119 8 0	53 11 0	67 9 6	618 7 0
(f) Sundries	835 1 10	153 14 5	58 3 1	93 13 0	195 15 7	1,336 15 11
Total, B.—Establishments	40,971 2 3	15,166 12 6	4,862 15 6	10,145 15 6	13,200 12 7	84,347 10 4
GRAND TOTAL OF EXPENDITURE ...	63,610 9 4	31,488 9 6	15,188 6 8	51,035 8 11	2,25,489 15 2	3,86,813 1 7

CALCUTTA:
The 13th June, 1882.

(Sd.) A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 54.—(PRESCRIBED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES, SCHOOL CIRCLE.

Account current for the year 1881-82.

CR.

Heads of account.	Rs. a. p.	Rs. a. p.
To cash balance on 1st April, 1881	...	7,772 14 4
„ Revenue as per annual summary (Form No. 53)	...	2,50,913 0 10
„ Service funds—		
Uncovenanted Service Family Pension Fund, Bengal ...	1,098 6 0	
Military Fund, Madras	896 10 3	1,995 0 3
„ Deposits	...	1,815 0 0
„ Forest Cash Remittances, (Local)		
Remittances from State Treasuries	2,83,092 13 11	
Inter-divisional transfers	914 15 0	2,84,007 12 11
„ Advance recoverable	...	2,00,232 15 6
„ Account current. Other Governments—		
Government of India	1,266 0 0	
Government of British Burma	350 0 0	1,616 0 0
„ Inter-departmental transfers :—		
Public Works Department, Rajpootana State Railway ...	379 15 3	
Other branches	9,992 6 5	10,372 5 8
Civil Department, Mathematical Instrument Department,		362 9 0
Total	...	7,59,085 10 6

Heads of account.	Rs. a. p.	Rs. a. p.
By expenditure as per annual summary (Form No. 53) ...	...	3,86,813 1 7
„ Deposits	...	555 0 0
„ Forest cash remittances, (Local)		
Remittances to State Treasuries	1,24,246 9 9	
Inter-divisional transfers	1,914 15 0	1,26,161 8 9
„ Advances recoverable	...	1,10,455 0 2
„ Account current. Other Governments—		
Government of India	606 0 4	
Government of Bengal	551 12 3	
Government of Central Provinces	625 0 0	
Government of British Burma	485 2 6	
Government of Assam	100 10 0	2,368 9 1
„ Inter-departmental transfers :—		
Public Works Department, Rajpootana and Scindia State Railway.	1,460 0 0	
Rajpootana and Malwa State Railway	88,125 0 0	
Other branches	9,125 0 10	98,710 0 10
Military Department, Bengal	...	29,683 10 4
Civil Department, rewards for passing examinations ...	...	180 0 0
„ Cash balance on 31st March, 1882	...	4,148 11 9
Total	...	7,59,085 10 6

CALCUTTA,
The 28th June, 1882.

(Sd.) A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 55.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Outstandings and liabilities on account of contractors and disbursers for 1881-82.

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings).	By Department (liabilities.)	
	Rs. a. p.	Rs. a. p.	Rs a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Direction	...	14,927 9 1	14,927 9 1	1,357 6 7	14,147 14 2	15,505 4 9	577 11 8	...	
Dehra Dún...	...	6,421 14 10	6,421 14 10	120 0 0	7,240 0 0	7,360 0 0	938 1 2	...	
Saháranpur	...	1,633 15 4	1,633 15 4	50 0 0	1,874 11 3	1,924 11 3	290 11 11	...	
Jaunsár	...	31.109 11 9	31,109 11 9	4,900 3 3	31,095 8 6	35,995 11 9	4,886 0 0	...	
Tons	...	1,46,139 12 6	1,46,139 12 6	95 269 11 11	56,096 14 3	1,51,366 10 2	5,226 13 8	...	
Total ...	...	2,00,232 15 6	2,00,232 15 6	1,01,697 5 9	1,10,455 0 2	2,12,152 5 11	11,919 6 5	...	

CALCUTTA:
The 14th June, 1882.

A. L. HOME,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 56.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Revenue received and outstandings on account of revenue during 1881-82.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year.	REMARKS.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a p	
Direction ...	Sales of timber and other produce	...	175 1 11	175 1 11	175 1 11	...	
Dehra Dún ...	Ditto	9,466 9 0	60,618 13 11	70.085 6 11	64.068 4 11	6,017 2 0	
Saháranpur ...	Ditto	2,444 6 6	39,184 4 0	41,628 10 6	38,235 12 0	3.392 14 6	
Jaunsár ...	Ditto	533 1 4	44,486 13 10	45,019 15 2	44,682 0 11	337 14 3	
Tons ...	Ditto	...	1,03,750 9 1	1,03,750 9 1	1,03,749 13 1	0 12 0	
	Total ...	12,444 0 10	2,48,215 10 9	2,60,659 11 7	2,5[illegible],911 0 10	(a) 9,748 10 9	Rs. a. p (a) From Public Departments, 3,613 0 3 „ other purchasers ... 6,135 10 6 Total ... 9,748 10 9

CALCUTTA:
The 28th June, 1882.

A. L. HOME,
Asst. Comptroller-General (Forests).

FORM No. 57—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Financial results of the year 1881-82.

Division.	*Timber and other produce removed from the forests by Government agency.*		*Other revenue.*		*Formation, protection and improvement of forests.*	*Total.*		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	
Dehra Dún ...	230	48	63,838	10,444	20,997	64,068	31,489	
Saháranpur ...	46	145	38,190	9,250	5,793	38,236	15,188	
Jaunsár	37,183	31,082	7,499	5,818	14,140	44,682	51,035	
Tons	91,492	2,06,942	12,258	1,254	17,294	1,03,750	2,25,490	
Direction ...	...	38,342	175	7,048	18,221	175	63,611	
Total ...	1,28,951	2,76,559	1,21,960	33,809	76,445	2,50,911	3,86,813	

FORM No. 58.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Trees felled by Government agency during the year 1881-82. (*Selection fellings.*)

Division.	*Trees felled.*		Remarks.
	Description.	Number.	
Dehra Dún ...	*Nil.*	*Nil.*	
Saháranpur ...	*Nil.*	*Nil.*	
Jaunsár	Fir	422	
	Oak	372	
	Box	98	
	Total ...	892	
Tons	Deodar	1,289	
	Chir (*P. longifolia*) ...	37	
	Kail (*P. excelsa*) ...	1	
	Kukat	42	
	Total ...	1,369	
	GRAND TOTAL ...	2,261	
	Abstract of the Circle.		
	Deodar	1,289	
	Chir (*P. longifolia*) ...	37	
	Kail (*P. excelsa*) ...	1	
	Fir	422	
	Oak	372	
	Box	98	
	Kukat	42	
	Total ...	2,261	

FORM No. 59—(SUGGESTED).

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Outturn of timber and other produce cut and collected by Government agency during the year 1881-82.

Division.	Produce cut and collected. How obtained.	Description.	Number or quantity.	Cubic feet.	REMARKS.
Dehra Dún ...	Old logs from forest,	Haldu logs... ...	4	24	
		Tún logs	9	142	
	Collected from the Ganges.	Drift tors	41	51	
		„ karis (sál) ...	2	3	
		„ miscellaneous poles,	4	11	
		„ slabs and pieces ...	9	17	
		„ tors	3,563	4,967	
		„ slabs and pieces ...	672	1,156	
		„ miscellaneous poles,	31	35	
		„ sándan plough ...	385	602	
	Confiscated ...	Total timber ...	4,720.	7,008	Total of Dehra Dún Division.
		„ charcoal (maunds,)	40	...	
		„ bamboos (scores,)	50½	...	
		„ honey (seers,) ...	10	...	
		„ wax (seers) ...	2	...	
Saháranpur ...	Drift ...	Sál logs ...	6	18	
		Tún do. ...	10	75	
		Sain do. ...	5	15	
		Jáman do. ...	2	18	
		Bákli do. ...	1	3	
		Gosham do. ...	1	3	
		Kukát do. ...	2	32	
		Chir do. ...	2	15	
		Sál poles	2	15	
		Sál sleepers ...	4	5	
		Sál karis ...	3	2	
		Sál and kukát tors ...	111	208	
		Khair churáns ...	3	3	
		Miscellaneous pieces ...	105	293	
		Sál tree	1	5	
		Total timber ...	258	710	Total of Saháranpur Division.
		Firewood	...	1,930	
		Bamboos (scores) ...	62½	...	
	Purchased ...	Bamboos (scores) ...	25	...	
Jaunsár ...	Selection fellings.	Fir logs	364	7,280	
		„ karis	4,722	4,242	
		„ planks	404	338	
		Deodar karis ...	127	376	
		Boxwood pieces ...	718	925	
	Confiscated and drift wood.	Tún planks ...	8	...	
		Sissoo karis ...	4	...	
		Sissoo logs... ...	1	...	
		Chir log	1	...	
		Deodar log... ...	1	...	
		Miscellaneous pieces ...	20	...	
		Total timber ...	6,370	13,161	Total of Jaunsár Division.
	Selection fellings,	Fir fuel	...	55,415	
		Oak fuel	...	24,381	
		Charcoal (maunds) ...	203	...	
	Fallen trees ...	Oak fuel	...	1,233	
		Fir fuel	...	320	
	Dead trees ...	Oak fuel	...	454	
Tons ...	Selection fellings,	Metre gauge deodar sleepers ...	45,866	61,155	
		Kail karis	8	34	
		Chir scantlings ..	725	2,608	
		Deodar scantlings and shingles ...	1,703	898	
	Purchased ..	10′ Deodar logs ...	158	3,476	Old logs cut by Messrs. Winton and Braidwood.
		6′ Deodar logs ...	170	2,100	
	Found ...	Broad gauge deodar sleepers ...	281	976	Found in Dádi forest.
	Purchased ...	Broad gauge deodar sleepers ...	45,075	1,56,503	Part of the timber purchased from Messrs. Winton and Braidwood.
		Metre gauge deodar sleepers ...	2,605	3,473	
		Total timber ...	96,591	2,31,223	Total of Tons Division.

FORM No. 59—(SUGGESTED).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, SCHOOL CIRCLE.

Outturn of timber and other produce cut and collected by Government Agency during the year 1881-82.—(continued.)

Division.	How obtained.	Produce received. Description.	Number or quantity.	Cubic feet.	Remarks.
		Abstract of the Circle.			
		Haldu logs ...	4	24	
		Tún logs	19	217	
		Sál logs	6	18	
		Sain logs	5	15	
		Jáman logs ...	2	18	
		Bákli logs	1	3	
		Goshan logs ...	1	3	
		Chir logs	3	15	
		Kikát logs ...	2	32	
		Deodar logs ...	329	5,576	
		Sissoo logs ...	1	...	
		Fir logs	364	7,280	
		Tors	3,715	5,226	
		Sal poles	2	15	
		Sál karis	5	5	
		Fir karis	4,722	4,242	
		Sissoo karis ...	4	...	
		Deodar karis ...	127	376	
		Kail karis	8	34	
		Sál sleepers ...	4	5	
		Deodar sleepers ...	93,827	2,22,107	
		Sál tree	1	5	
		Sándan ploughs ...	385	602	
		Khair churans ...	3	3	
		Fir planks	404	338	
		Tún planks ...	8	...	
		Boxwood pieces ...	718	925	
		Deodar scantlings and shingles.	1,703	898	
		Miscellaneous poles ...	35	46	
		Chir scantlings ...	725	2,608	
		Miscellaneous pieces ...	806	1,466	
		Total timber ...	1,07,939	2,52,102	Total of the Circle.
		Firewood	...	83,733	
		Charcoal (maund) ...	243	...	
		Bamboos (scores) ...	138	...	
		Honey and wax (seers)...	12	...	

FORM No. 60—(SUGGESTED).

FOREST DEPARTMENT, N.-W. PROVINCES AND OUDH, SCHOOL CIRCLE.

Timber and other produce received from Forests in Sale Depôts during the year 1881-82.

Division.	Depôt.	Produce received. Description.	Number or quantity.	Cubic feet.	Remarks.
Dehra Dún ...	...	...	...	...	
Saharanpur ...	...	..	...	...	
Jaunsár ...	Chakráta ...	Sál ballis	1	1	
		Deodar karis ...	130	378	
		Rai karis	4,743	4,279	
		Rai planks... ...	370	290	
		Oak fuel	...	35,080	
		Fir fuel	...	1,01,335	
		Charcoal (maunds) ...	42	...	
Tons	Delhi ...	Broad gauge sleepers ...	394	1,375	
		Metre gauge sleepers ...	50,350	67,133	
		Deodar beams ...	15	75	
		Total ...	56,003	2,09,896	
			24	Maunds.	
		Abstract of the Circle.			
		Deodar karis ...	130	378	
		Rái scantlings ...	5,113	4,569	
		Sal poles ...	1	1	
		Deodar sleepers ...	50,744	68,508	
		Deodar beams ...	15	75	
		Total Timber ...	56,003	73,531	Total of the Circle.
		Firewood	...	1,36,365	
		Charcoal	42	Maunds.	

FORM No. 61—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Sales of timber and other produce cut and collected by Government agency during the year 1881-82.

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	REMARKS.
		SOLD FROM DEPÔTS.			
Dehra Dún...	*Nil.*	*Nil.*			
Sahâranpur,	*Nil.*	*Nil.*			
Jaunsár ...	Chakráta ...	Deodar scantlings ...	752	1,401	
		Fir ditto ...	2,026	1,506	
		Kail ditto ...	2	4	
		Sál poles ...	1	1	
		Oak fuel ...	...	39,260	
		Fir do. ...	...	101,888	
		Charcoal ...	Mds. 42	...	
Tons ...	Delhi ...	Broad gauge Deodar sleepers ...	173	608	
		Metre ditto ...	47,799	63,732	
		Deodar beams ...	15	75	
		SOLD LOCALLY.			
Dehra Dún...	Dehra Dún ...	Haldu logs ...	4	24	
		Tun do. ...	9	142	
	Kharkari ...	Drift tors ...	41	51	
		Do. karis ...	2	3	
		Do. gats ...	3	10	
		Do. balli ...	1	1	
		Do. slabs ...	3	2	
		Do. kukát pieces ...	6	15	
	Various ...	Confiscated tors ...	3,563	4,967	
		Ditto unprepared pieces ...	565	795	
		Ditto ballis ...	31	35	
		Ditto sándan ploughs,	385	602	
		Ditto other wood ...	107	361	
		Ditto charcoal ...	Mds. 337	...	
		Ditto bamboos ...	Scores 50½	...	
		Ditto honey ...	Seers 10	...	
		Ditto wax ...	Do. 2	...	
Sahâranpur,	Hardwár ...	Sál and sissoo logs, &c. ...	47	187	Not including the Kankhal Majhára drift wood lease and timber confiscated in Chillawála, Mohan, Sukh and Khujnaur blocks, the amount of which cannot be given.
	Kankhal ...	Sál, sissoo and kukát log, karis, tors &c. ...	196	504	
	Saheara ...	Sál tree	1	5	
	Khára ...	Sál and kukát pieces ...	14	14	
	Hardwár ...	Firewood	...	210	
	Kankhal ...	Ditto	...	820	
	Bhogpur ...	Ditto	...	900	
	Malapur ...	Bamboos	Scores 34	...	
	Kankhal ...	Ditto	Do. 28½	...	

FORM No. 61—(Suggested.)

Forest Department, North-Western Provinces and Oudh, School Circle,

Sales of timber and other produce cut and collected by Government agency during the year 1881-82.—(concluded).

Division.	Depôt or locality.	Produce sold. Description.	Number or quantity.	Cubic feet.	Remarks.
Saháranpur...	Purchased ...	Bamboos	Scores 25	...	
Jaunsár ...	Various ...	Confiscated planks ...	8	...	
		Ditto ploughs ...	2	...	
		Drift logs	25	...	
		Oak firewood... ...		1,470	
		Charcoal	Mds. 157	...	
Tons ...	Dághpathar ...	Broad gauge, Deodar sleepers	181	580	
		Metre gauge, Deodar sleepers	459	612	
		Deodar beams ...	15	141	
		Abstract of the Circle.			
		Sold from Depôts.			
		Deodar scantlings ...	752	1,401	
		Fir ditto ...	2,026	1,506	
		Káil ditto ...	2	4	
		Sál pole ...	1	1	
		Deodar sleepers ...	47,972	64,340	
		Ditto beams ...	15	75	
		Total Timber ...	50,768	67,327	Total sold from depôts.
		Firewood ...	...	141,148	
		Charcoal ...	Mds. 42	...	
		Sold Locally.			
		Haldu logs ...	4	24	
		Sál do. ...	6	18	
		Tun do. ...	10	217	
		Sáin do. ...	5	15	
		Jáman do. ...	2	18	
		Bákli do. ...	1	3	
		Gosham do. ...	1	3	
		Kukát do. ...	2	32	
		Chir do. ...	3	15	
		Deodar do. ...	1	...	
		Sissoo do. ...	1	...	
		Sál poles ...	2	15	
		„ sleepers ...	4	5	
		„ karis ...	5	5	
		„ tree ...	1	5	
		„ and kukat tors ...	3,715	5,226	
		Khair churans ...	3	3	
		Miscellaneous poles ...	35	46	
		Sándan ploughs ...	385	602	
		Slabs and other pieces ...	786	1,466	
		Miscellaneous logs and pieces ...	32	...	
		Deodar sleepers ...	640	1,192	
		Deodar beams ...	15	141	
		Total, Timber ...	5,668	9,051	Total sold locally.
		Firewood	...	3,400	
		Charcoal	Mds 494	...	
		Bamboos	Scores 138	...	
		Honey and wax ...	Seers 12	...	

FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the year 1881-82.

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Balance at commencement of the year.				
Dehra Dún Division. — Sál	453	1,359	453	1,359
Dehra Dún Division. — Charcoal (mds.) ...	380	mds.	380	
Saháranpur Division	Nil.	...		
Jaunsár Division, — Deodar timber ...	7,662	16,367	9,400	17,499
Jaunsár Division, — Rai timber	1,708	1,093		
Jaunsár Division, — Sissoo planks	4	4		
Jaunsár Division, — Kail karis	26	35		
Jaunsár Division, — Oak firewood	...	5,579	...	22,949
Jaunsár Division, — Fir ditto	...	17,350		
Tons Division ... — Broad gauge deodar sleepers,	2	7	801	1,072
Tons Division ... — Metre gauge deodar ditto,	799	1,065		
Total balance ... — Timber	...	...	10,654	12,930
Total balance ... — Firewood	...	...	...	22,949
Total balance ... — Charcoal (mds.) ...	...	...	380	
Received from the Forests in Depôts.				
Deodar timber	130	378	56,003	73,531
Fir ditto	5,113	4,569		
Sál balli	1	1		
Broad gauge deodar sleepers	394	1,375		
Metre gauge deodar ditto	50,350	67,133		
Deodar beams	15	75		
Oak firewood	...	35,080	...	136,365
Fir ditto	...	101,335		
Charcoal (mds.)	42	mds.	42	
Received from the forests and sold locally.				
Haldu logs	4	24		
Tún logs	9	142		

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Removed by purchasers from Depôts.				
Deodar timber	752	1,401	50,768	67,327
Fir timber	2,026	1,506		
Sál balli	1	1		
Kail karis	2	4		
Broad gauge deodar sleepers	173	608		
Metre gauge ditto	47,799	63,732		
Deodar beams	15	75		
Oak firewood	...	39,260	...	141,148
Fir ditto	...	101,888		
Charcoal (mds.)	42	mds.	42	
Sold locally.				
Haldu logs	4	24	5,668	9,051
Tún logs	9	142		
Drift timber	349	792		
Confiscated timber	4,651	6,760		
Broad gauge deodar sleepers	181	580		
Metre gauge ditto	459	612		
Deodar beams	15	141		
Firewood	...	3,400	...	3,400
Charcoal (mds.)	494	mds	494	...
Bamboos (scores)	138	(scores)	138	...
Honey and wax (seers)	12	(seers)	12	...
Transferred to the Executive Engineer, Military Works, Chakrata.				
Fir karis	3,180	2,868	3,180	2,868

FORM No. 62.—(PRESCRIBED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Account of Timber and other Produce cut or collected by Government agency and brought ton Sale Depôts or sold locally during the year 1881-82.—(concluded.)

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Drift and confiscated timber	5,000	7,552		
Broad gauge deodar sleepers	181	580		
Metre gauge deodar ditto	459	612		
Deodar beams	15	133	5,668	9,051
Firewood	...	3,400	...	3,400
Charcoal (mds.)	494	(mds.)	494	
Bamboos (scores)	138	(scores)	138	
Honey and wax (seers)	12	(seers)	12	
Grand Total ... Timber	...	...	72,325	102,512
Grand Total ... Firewood	...	...	...	162,714
Grand Total ... Charcoal (mds.) ...	...	...	916	...
Grand Total ... Bamboos (scores) ...	...	...	138	...
Grand Total ... Honey and wax (seers) ...	...	...	12	...

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
Lost in restacking.				
Oak firewood	...	600	...	600
Used by Department.				
Deodar timber	465	493		
Fir ditto	205	129		
Kail ditto	1	2		
Miscellaneous timber	4	...	675	624
Transferred from depôt stock and sold locally.				
Metre gauge deodar sleepers	22	29	22	29
Written off from depôt stock by Comptroller-General's instruction.				
Sál	453	1,359	453	1,359
Charcoal (mds.)	380	(mds.)	380	
Balance in hand on 31st March, 1882.				
Dehra Dún Division	Nil.	...		
Sahárunpur ditto	Nil.	...		
Jaunsár Division, Deodar timber	6,571	14,849		
Jaunsár Division, Rai ditto	1,410	1,161		
Jaunsár Division, Sissoo planks	4	4		
Jaunsár Division, Kail karis	23	29		
Jaunsár Division, Oak firewood	...	767		
Jaunsár Division, Fir ditto	...	16,799		
Tons Division ... Broad gauge deodar sleepers,	223	774		
Tons Division ... Metre gauge ditto	3,328	4,437		
Total balance ... Timber	...	...	11,559	21,254
Total balance ... Firewood	...	...	...	17,566
Grand Total ... Timber	...	...	72,325	102,512
Grand Total ... Firewood	...	...	...	162,714
Grand Total ... Charcoal (mds.) ...	...	...	916	...
Grand Total ... Bamboos (scores) ...	...	...	138	...
Grand Total ... Honey and wax (seers) ...	...	...	12	...

FORM No. 63.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Timber and other produce cut, collected, and removed from the forests, by consumers or purchasers, including pasture, during the year 1881-82.

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	REMARKS.
			Rs.	Rs.	
Dehra Dún ...	Sál trees	5,070	13,426	13,426	
	Kukát trees	1,112	3,919	3,919	
	Sain karis	2,806	2,708	2,708	
	Dry sál tors	19,081	6,130	6,130	
	Dry kukát tors	160	101	101	
	Inferior tors	310	150	150	
	Kukát thám and thunis ...	90	16	16	
	Ditto korwas	1,640	30	30	
	Ditto ballis	48	19	19	
	Ditto kandis	22	1	1	
	Miscellaneous	19	64	64	
	Timber on lines	...	20	20	The quantities cannot be given.
	Lease of standing dead wood ...	...	1,015	765	
	Ditto fallen dead wood ...	...	2,663	2,663	
	Timber sold to Canal Department,	...	6,400	6,400	
	Ditto on land granted to Messrs. Lister and Co.	...	2,492	...	
	Total timber ...	30,358	39,154	36,412	
	Firewood, cartloads ...	941	586	586	
	Ditto head loads ...	7,444	234	234	
	Ditto camel-loads ...	64	20	20	
	Ditto pony and donkey loads,	5,416	643	643	
	Ditto banghy loads ...	...	1	1	The quantities c given.
	Lease of fallen fuel ...	...	1,186	1,186	
	Charcoal, (maunds)	1,325	265	265	
	Total, firewood and charcoal ...	...	2,935	2,935	
	Bamboos, 15ft. (scores) ...	150	38	38	
	Ditto, 10ft. (ditto) ...	12,842	1,207	1,207	
	Bansis	6,205	155	155	
	Lease of bamboos	...	3,901	3,901	The number cannot be given.
	Total bamboos (scores) ...	19,197	5,301	5,301	
	Grazing camels	502	501	501	
	Ditto buffaloes	2,433	1,217	1,217	
	Ditto cows and bullocks ...	7,144	1,766	1,766	
	Ditto ponies and donkeys ...	5,349	747	747	
	Ditto sheep and goats ...	5,141	321	321	
	Elephant's fodder	2,123	1,062	1,062	The number cannot be given.
	Grazing dues from residents ...	...	4,186	4,186	
	Fodder grass, pony and donkey loads	85	11	11	
	Fodder, grass, head loads ...	191	6	6	
	Total grazing ...	22,968	9,827	9,827	
	Pula grass, cartloads ...	417	208	...	Outstanding on account of grass sold to Gurkha Regiment.
	Lease of limestones	...	1,083	1,083	
	Ditto hides	...	213	213	
	Ditto horns	...	50	50	The quantities cannot be given.
	Ditto manure	...	25	25	
	Other minor produce. Leases ...	...	2,270	2,270	
	Other minor produce. Sales of passes and tickets.	...	1,834	1,834	
	Total minor produce ...	...	5,683	5,475	
Sahárunpur ...	Sál karis, tors, ballas ...	6,400	3,436	3,436	
	Sain and jáman karis, tors ...	6,193	2,313	2,313	
	Kukát karis and tors ...	2,110	618	618	
				6,367	
	Deduct realized in advance in 1880-81.	...	...	475	
				5,892	
	Khair and gosham churans ...	2,058	1,849	1,849	
	Sandan and sissoo ploughs ...	419	158	158	
	Kukát ballis	349	158	158	
	Ditto thámis	576	159	159	
	Ditto thunis	714	119	119	
	Ditto korwas	3,411	100	100	
	Sál and sissoo pieces ...	152	59	59	
	Sain and khair pieces ...	14	10	10	
	Kukát pieces	5	1	1	
	Total timber ...	22,401	8,505	8,505	
	Firewood cartloads, head loads &c.	...	1,679	1,679	The quantities cannot be given.
	Charcoal	...	3	3	
	Lease of firewood	...	3,305	3,305	
	Total firewood and charcoal ...	...	4,987	4,987	

FORM No. 63.—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1881-82—(continued.)

Division.	Produce removed. Description.	Number or quantity.	Amount of revenue.	Amount actually realized during the year.	REMARKS.
		Rs.	Rs.	Rs.	
Saháranpur ... (*concluded*).	Bamboos (scores)	10,711	1,024	1,024	
	Lease of bamboos	...	2,504	2,504	
	Total bamboos ...	10,711	3,528	3,528	
	Grazing cows and bullocks ...	11,305	2,762	2,762	
	Ditto buffaloes	1,404	702	702	
	Ditto elephant	5	20	20	
	Ditto camels	406	389	389	
	Ditto ponies	4,730	727	727	
	Ditto sheep and goats ...	41,333	2,571	2,571	
	Fodder grass	...	59	59	The number cannot be given.
	Arrears received through the Collector	...	6,692	6,692	
	Total grazing ...	59,243	13 922	13,922	
	Grass	...	1,866	1,866	The quantities cannot be given.
	Leaves	...	457	457	
	Fruit	...	28	28	
	Stones	...	7	7	
	Gum	...	4	4	
	Creepers...	...	24	24	
	Honey and wax	...	25	25	
	Lac	...	11	11	
	Leases minor produce ...	...	3,305	3,305	
	Miscellaneous	...	13	13	
	Total minor produce ...	...	5,740	5,740	
Jaunsár ...	Kukát ballis, tool handles ...	1,818	74	74	
	Chir trees	100	400	400	
	Goshani trees	11	55	55	
	Haldu cartloads	14	70	70	
	Khair trees	30	22	22	
	Bákli karis	146	55	55	
	Mango and Sál logs... ...	3	5	5	
	Total timber ...	2,122	681	681	
	Firewood and charcoal (lease) ...	...	200	200	The quantity cannot be given.
	Kukát firewood, c. ft. ...	3,860	200	200	
	Charcoal (maunds)	307	199	199	
	Total firewood and charcoal...	...	599	599	
	Ringál (scores)	5,150	166	166	
	Bamboos do.	4	1	1	The number cannot be given.
	Lease of bamboos				
	Total bamboos ...	...	10	10	
	Grazing cows and bullocks, &c...	...	177	177	
	Lease of grazing	...	923	923	Ditto ditto.
	Total grazing ...	...	140	140	
	Grass	...	1,063	1,063	
	Other minor produce (lease) ...	...	2	2	The quantities cannot be given.
	Stone tiles	...	240	240	
	Limestones, c.ft.	...	2	2	
	Total minor produce ...	1,400	17	17	
Tons ...	Chir trees	...	261	261	
	Chir logs	319	986	967	
	Deodar trees	20	5	5	
	Total timber ..	590	4,649	4,649	
	Grazing, sheep and goats ...	929	5,640	5,621	
	Ditto, bullocks	1,642	51	51	
	Ditto, buffaloes	158	40	40	
	Ditto, dues from Tirhoch ...	443	215	215	
	Total grazing ...	...	15	15	The number of animals cannot be given.
		2,243	321	321	
	Abstract of the Circle.				
	Timber	55,810	53,980	51,219	The quantities given do not include produce sold under leases, the amount of which cannot be given at present, nor certain other items, see remarks above.
	Firewood	...	8 054	8,054	
	Charcoal	...	467	467	
	Bamboos &c, (scores) ...	35,062	9,007	9,007	
	Grazing	84,454	25,132	25,132	
	Minor produce	...	11,684	11,476	
	Total ...	...	1,08,324	1,05,355	

FORM No. 64—(SUGGESTED.)

FOREST DEPARTMENT, NORTH-WESTERN PROVINCES AND OUDH, SCHOOL CIRCLE.

Revenue derived from, and expenditure incurred on, timber and other produce sold to public departments from depôt during the year 1881-82.

Name of Department.	Particulars of supplies.	Amount supplied		Rate. At	Rate. Per	Amount of revenue. Due.	Received.	Total Outstanding.	Cost of Forest Department. Timber expenses under A.I.	Quota of all other expenditure chargeable against timber, &c.	Total.	Comparison of revenue and expenditure. Surplus.	Deficit.
JAUNSÁR DIVISION.			c. ft.	Rs. a. p.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Executive Engineer, Chakrata Division, Military Works.	Charcoal		48	0 8 0	c. ft.	24	24	...					
	Oak firewood		666	15 0 0	% „	100	100	...					
Commissariat Officer, Chakrata.	Fir firewood		58,056	22 8 0	% „	13,063	13,063	...					
	Ditto		39,560	25 0 6	% „	9,901	9,901	...					
	Oak firewood		17,200	33 0 0	% „	5,676	5 676	...					
	Ditto		920	30 0 0	% „	276	276	...					
	Ditto		349	15 9 10	% „	55	55	...					
	Ditto		298	15 9 8	% „	47	47	...					
	Ditto		156	15 10 9	% „	24	24	...					
	Total, c. ft. ...		117,253	...	...	29,166	29,166	...	19,528	3,974	23,502	5,664	...
		No.	c. ft.										
Executive Engineer, Chakrata Division, Military Works.	Deodar karis, 1st class ...	113	236	1 8 0	c. ft.	355	355	...					
	Ditto, 2nd class ...	258	529	1 0 0	„	529	529	...					
	Fir planks	1,019	743	1 0 0	each,	1,019	744	275					
	Fir karis	464	425	1 0 0	c. ft.	425	362	63					
	Total ...	1,933		...	...	2,328	1,990	338	2,546	570	3,116	...	788
	Total, Jaunsár Division.			...	...	31,494	31,156	338	22,074	4,544	26,618	5,664	788
TONS DIVISION.													
Rájputána State Railway open line.	Metre gauge deodar sleepers,		730	2 0 0	each,	1,460	1,460	...	1,095	13	1,108	352	
Manager, Rájputána and Malwa State Railway.	Ditto		47,000	1 14 0	„	88,125	88,125	...	71,204	5,883	77,087	11,038	
Gun Carriage factory, Fatehgarh.	Broad gauge deodar sleepers,		123	3 12 0	„	461	461	...	461	...	461	...	
	Total, Tons Division.			...	...	90,046	90,046	...	72,760	5,896	78,656	11,390	...
	GRAND TOTAL,			...	...	1,21,540	1,21,202	338	94 834	10,440	1,05,274	17,054	788
								Deduct surplus (or deficit)				788	
								Balance for the Department				16,266	

FORM No. 65—(Suggested.)

Forest Department, North-Western Provinces and Oudh, School Circle.

Abstract showing the value of timber and other produce at sale depôts for the year 1881-82.

Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
	Number	Cubic feet.	Value.	Number.	Cubic feet	Value.	In favor of the year.	Against the year.
			Rs.			Rs.	Rs.	Rs.
Dehra Dún Division—								
Sál	453	1,359	113	...	...	...	...	113
Charcoal, mds.	380	...	160	...	...	...	...	160
Total, { Timber ... / Charcoal mds. ...	453 / 380	1,359	273	...	...	...	...	273
Saháranpur Division	...	...	...	...	...	...	...	...
Jaunsár Division—								
Deodar karis and planks ...	7,662	16,367	16,037	6,571	14,849	14,849	...	1,188
Rai karis, planks and ballis ...	1,708	1,093	336	1,410	1,161	232	...	104
Kail karis and planks	26	35	25	23	29	23	...	2
Sissoo planks	4	4	4	4	4	4	...	...
Oak and fir firewood	...	22,949	4,888	...	17,566	3,670	...	1,218
Total ...	9 400	40,448	21,290	8,008	33,609	18 778	...	2,512
Tons Division—								
At Delhi Depôt.								
Broad gauge deodar sleepers ...	2	7	4	223	774	892	888	...
Metre gauge deodar sleepers ...	799	1,065	1,598	3,328	4,437	1,664	66	...
In Forests.								
Broad gauge deodar sleepers ...	...	...	...	45,075	156,503	90,150	90,150	...
Metre gauge deodar sleepers ...	...	...	...	11,749	16,532	9,379	9,379	...
10′ deodar logs	...	...	...	158	3,476	59	59	...
6′ deodar logs	...	...	...	170	2,100	42	42	...
Total ...	801	1,072	1,602	60,703	183,822	1,02,186	1,00,584	...
Grand Total ...	10,654 / mds.380	42,879	23,165	68,711	217,431	1,20,964	1,00,584	2,785

Note.—Net difference in favor of the year, Rs. 97,799.

FORM No. 65.—(Suggested.)

Forest Department, North-Western Provinces and Oudh, School Circle.

Abstract showing the value of Live and Dead Stock for the year 1881-82.

Description of live and dead stock.	On hand at the commencement of the year.		On hand at the close of the year.		Difference in value.	
	No.	Value.	No.	Value.	In favor of the year.	Against the year.
Dehra Dún Division.		Rs.		Rs.		Rs.
Surveying and other instruments	16	158	24	155	...	3
Tools	1,217	548	1,374	787	239	...
Office furniture	31	304	56	418	114	...
Tents	6	466	13	969	503	...
Buildings and building materials, &c. ...	30	2,162	44	3,530	1,368	...
Miscellaneous	118	185	204	267	82	...
Elephants	2	4,800	1	2,800	...	2,000
Total ...	1,420	8,623	1,716	8,926	2,306	2,003
Saháranpur Division.						
Surveying and other instruments	8	44	8	44	...	...
Machinery	...	...	20	136	136	...
Tools	838	451	882	491	40	...
Office furniture	51	329	97	587	258	...
Tents	7	240	6	215	...	25
Buildings and building materials	25	1,493	26	1,497	4	...
Miscellaneous	288	828	293	538	..	290
Elephants	1	2,000	1	2,000	...	...
Total ...	1,218	5,385	1,333	5,508	438	315
Jaunsár Division.						
Surveying and other instruments	8	61	8	61	...	...
Machinery	3	19	...	...	...	19
Tools	1,158	2,936	1,027	2,579	...	357
Office furniture	16	101	22	110	9	...
Tents	3	201	3	201	...	...
Buildings and building materials	62	21,742	66	23,271	1,529	...
Total ...	1,250	25,060	1,126	26,222	1,538	376
Tons Division.						
Surveying and other instruments	3	24	15	239	215	...
Machinery	6	33	10	77	44	...
Tools	498	1,540	1,309	1,911	371	...
Office furniture	13	106	29	168	62	...
Tents	2	150	2	150	...	...
Buildings and building materials	16	5,100	25	6,952	1,852	...
Miscellaneous	36	83	76	181	98	...
Total ...	574	7,036	1,466	9,678	2,642	...
Direction.						
Surveying and other instruments	33	317	33	317	...	...
Machinery	...	...	1	8	8	...
Tools	24	38	36	503	465	...
Office furniture	60	820	261	3,400	2,580	...
Tents	9	1,017	11	1,077	60	...
Buildings and building Materials	7	20,245	8	20,465	220	...
Miscellaneous	10	108	16	2,435	2,327	...
Elephants	...	...	1	2,000	2,000	...
Total ...	143	22,545	367	30,205	7,660	...
Grand Total ...	4,605	68,649	5,865	80,539	14,584	2,694

APPENDIX A.

Forest Department, North-Western Provinces and Oudh, School Circle.

Record of Reserved Forests, Jaunsár division, Lokandi Forest. Detailed description of boundaries and boundary marks.

Name of Blocks.	Number of Pillar.	Situation of Pillar.	From last Pillar.		Description of boundary from pillar to pillar.	Remarks.
			Bearing in degrees by N	Direct distance in Chains.		
	1	On top of rock				
	2	East edge of pathway	20	5½	Down crest of spur.	
	3	Ditto ditto	100	3	Follows east-edge of pathway.	
	4	Bottom of small ravine	110	7¼	Straight line across face of slope.	
	5	Crest of spur	121	5	Ditto ditto.	
	6	N.-E corner of cultivation	136	10	Follows the contour of the hill.	
	7	Edge of cultivation	152	3	Follows edge of cultivation.	
	8	N.-W. corner of cultivation	168	5½	Ditto ditto.	
	9	At junction of roads	180	7	Straight line up the hill.	
	10	At junction of road and stream	182	4¼	Follows north edge of path.	

REPORT ON THE WORKING PLAN DIVISION FOR THE YEAR 1881-82.

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N.-W. PROVINCES.

SCHOOL CIRCLE.

ANNUAL PROGRESS REPORT, WORKING-PLAN DIVISION, 1881-82.

Officers in Charge.

1. Mr. E. E. Fernandez held charge throughout the year, but he accompanied the Inspector-General of Forests on his tour of inspection from 1st to 10th April, and during this time the current field work was carried on by Mr. A. F. Broun. Mr. A. E. Lowrie was transferred to the Saháranpur Division on the 14th April.

Field work in the Spring of 1881.

2. The whole of the period from the 1st April to the 5th July was spent at Naini Tál in the enumeration survey and examination of the Protected forests.

3. *Arrival at Naini Tál, strike of old and organization of new establishment.*—The establishment employed in the Nandaur valley, which comprised eight parties of one recorder and four gauge-men each, was taken to Naini Tál, and arrived there on the 1st April; here, in consequence of a dispute about their pay, all the men with the exception of one gauge-man struck work. A new party, of which the old gauge-man formed the nucleus, was raised on the 15th April, and, after three days' training, four additional parties were raised, the men of the first party being distributed among them. Later in the season the number of parties was increased to seven.

4. *Work to be done and procedure adopted.*—The work to be accomplished at Naini Tál consisted of the enumeration survey and the examination and description of 12,302 acres of forest which remained over after the close of Mr. Dansey's work in 1879. The first step was the demarcation of the survey plots, which was effected by marking trees and rocks within sight of each other by means of white bull's eyes or rings and arrows. At first zinc paint was used for this purpose; but this proved expensive, and ordinary whitewash prepared with rice water having been found to answer equally well, it was afterwards used instead of the zinc paint. It may here be mentioned that a plane-table was brought from Dehra, and that two of the recorders being acquainted with its use the plot boundaries were laid down on the map by it, and tracings of the plots were furnished for the guidance of the recorders; this arrangement was found to save much inconvenience and loss of time. As soon as the demarcation of plots had progressed sufficiently far ahead, the enumeration of trees was commenced. Mr. Dansey had adopted the following diameter classes:—

Class.	*Diameter.*
I.	above 2′ 6″
II.	from 2′ to 2′ 6″
III.	„ 1′ 6″ to 2′
IV.	„ 1′ to 1′ 6″
V.	„ 6″ to 1′

and he counted the whole of the trees, 12 kinds being recorded separately, and the remainder being entered under the head of "other species;" but at Mr. Brandis' suggestion Mr. Fernandez reduced the number of diameter classes to four by the amalgamation of the first two of Mr. Dansey's classes, and the work was further simplified by confining the enumeration to the following 11 species, *viz.*:—

Pinus longifolia.	*Q. lanuginosa.*
Cupressus torulosa.	*Rhododendron arboreum.*
Quercus annulata.	*Andromeda ovalifolia.*
Q. incana.	*Shorea robusta.*
Q. dilatata.	*Terminalia tomentosa.*
Q. semicarpifolia.	

The method of enumeration was that described in para. 7 of last year's report, and a check was effected by the resurvey of selected plots; this was never done by the party which made the original survey. The examination and description of plots was continued simultaneously with the enumeration survey, and in order to secure uniformity, the plots previously examined by Mr. Dansey were re-examined and described.

5. *Work accomplished.*—Of the 12,302 acres mentioned in the preceding paragraph, 3,897 acres were excluded from the survey on account of the precipitous nature of the ground or inferior quality of the growing stock; but the alteration of the boundaries of some of Mr. Dansey's plots, and other circumstances, led to the resurvey of many of them, and the total outturn of work was as follows:—

Enumeration survey.				*Acres.*
Area surveyed for the first time	...	...	...	8,405
Plots of 1879 resurveyed ...	...	...	...	2,703
				11,108
Check survey ...	...	...	...	1,758
		Total	...	12,866

The demarcation, examination, and description of plots extended over the whole forest, or 19,625 acres. The total number of trees standing on 11,108 acres was found to be 460,574.

The work extended over a period of 82 days, from which 22 days must be deducted on account of Sundays, holidays, and rainy days, and on six days work ceased from other causes, wages being witheld, so that the actual number of working days was 54.

Recess of 1881.

6. Work ceased at Naini Tál on the 5th July, and the officers then proceeded to Dehra, where they arrived on the 9th July. Here they remained until the 21st September, working up the data collected in the field and taking out areas. Mr. Dansey's descriptions of 43 compartments of the Naini Tál forests were condensed and rewritten; while Messrs. Fernandez and Broun were both engaged in work connected with the course of instruction at the Forest School, which occupied Mr. Fernandez on an average 2½ hours a day throughout the recess, and Mr. Broun 1½ hours a day for three weeks.

Field work in the Autumn of 1881 and Winter of 1881-82.

7. On the 22nd September, Messrs. Fernandez and Broun left Dehra for Ránikhet, where they and their establishments were employed until the 7th December. From the 8th December to the 5th February the work lay in the Nandaur valley, and from the 6th February to the end of the financial year the Working Plan Division was employed at Naini Tál.

Ránikhet.

8. *Arrival at Ránikhet. Establishment.*—Delayed by difficulty in obtaining carriage, Ránikhet was not reached until the 3rd October. The recorders employed during the spring at Naini Tál were present by appointment, and each recorder provided his own party of four gauge-men. It was soon found however that four gauge-men could not fully employ the recorder, so a fifth man, and subsequently a sixth, was added to each party, and this was found to be a much better and more economical arrangement. The number of parties throughout the work at Ránikhet was six; and the pay of the recorders was Rs. 10, Rs. 11 or Rs. 12, according to their efficiency.

9. *Work to be done and procedure adopted.*—The work to be done at Ránikhet, which was suggested in Mr. Brandis' memorandum of the 18th April, 1881, consisted of the examination and description, with a view to the revision of Mr. Brereton's

working plan, of the compartments formed by him in the Ránikhet reserve (area 4,854 acres); and of the enumeration survey, examination, and description of the most accessible of the Protected forests lying around the cantonment. The work in the Ránikhet reserve was completed on the 15th October. In the Protected forests the demarcation of the plots was effected with geru (the impure ferric oxide of the bazar) and oil, whitewash not being obtainable.

The following were the diameter classes, *viz.*:—

Class.		*Diameter.*
I.	above	2′
II.	from	1′ 6″ to 2′
III.	,,	1′ to 1′ 6″
IV.	,,	6″ to 1′

and the following species of trees were counted separately :—

Pinus longifolia.	*Rhododendron arboreum.*
Quercus incana.	*Andromeda ovalifolia.*
Q. dilatata.	

all other species being counted and recorded together. The work of enumeration was checked partly by the resurvey of selected plots, and partly by the addition of a second recorder during the original enumeration, with a view to the check of the record made. The description and examination of plots followed immediately on the enumeration.

10. *Work accomplished.*—The areas over which the enumeration survey extended were as follows :—

Forests.	*Acres.*
Padoli	942
Chaubattia east	875
Chaubattia west	335
Sauni	4,489
Kathalek	1,754
Shiun	707
Ganiadeoli	901
Chilianao	631
Karchauli	214
Dwárshun	1,272
Total ...	12,120

The number of trees counted was 767,272. An additional area of 115 acres in Dwárshun, which was excluded from the enumeration survey, was examined and described, so that the total area examined and described was 12,235 acres. In addition to the above work, and with the object of ascertaining the production per acre at various stages of growth, the number of trees on several selected areas, which were fully stocked and which each contained trees of an uniform age, was counted ; and the number of rings was counted on 190 sections of *P. longifolia*, the number on each inch of four radii, meeting at right angles to one another at the centre of the tree, being separately recorded. The enumeration survey occupied a period of 56 days from 7th October to 1st December.

Nandaur Valley.

11. *Arrival, establishment.*—The establishment reached the Nandaur valley from Ránikhet on the 14th December, when two additional parties were formed, thus raising the total number of parties to eight. Until the 31st December the number of men in each party was maintained at six, but after that date a seventh man was added.

12. *Work to be done, and procedure adopted.*—The work to be done here consisted of the examination and description of the whole valley, and the enumeration survey from the point where work stopped at the end of the previous season to the head of the valley. The demarcation of the plots was effected with whitewash made with

rice water. The ground near the head of the valley being much broken, a longer time than usual was spent on this work. The classification of trees was the same as last year, *viz.*:—

Class.		*Diameter.*
I.	above	2′
II.	from 1′ 6″	to 2′
III.	„ 1′	to 1′ 6″
IV.	„ 6″	to 1′

and the species counted separately were :—

Shorea robusta.	*Dalbergia sissoo.*
Terminalia tomentosa.	*Acacia catechu.*
Pinus longifolia.	

Trees of other species were not counted. The system of check was the same as that adopted in the Naini Tál forests. The examination and description of compartments were conducted as usual.

13. *Work accomplished.*—The total area over which the enumeration surveys extended was 11,143 acres, the number of trees counted was 322,458, and the area examined and described was 29,279 acres. There were 37 days of actual work.

Naini Tál.

14. Naini Tál was again reached on the 8th February, four of the best parties having been taken up from the Nandaur Valley. Some of the plots originally surveyed by Mr. Dansey in 1879 were resurveyed ; but the principal work consisted in making experimental fellings in order to ascertain the quantity of standing stock and the rate of growth. The work was still in progress at the close of the financial year, and a detailed account of it will be included in next report.

Rate of progress and cost.

15. The following statement shows the outturn of work, the rate of progress, and the cost of the work in the three localities :—

Name of forest.	WORK DONE AND RATE OF PROGRESS.								COST.					
	ENUMERATION.						*Examination and description of plots.*		Total cost, including all charges.	ENUMERATION.				Examination and description of plots. Average cost per 100 acres.
			Average daily outturn.							*Average cost including all charges.*		*Average charges, excluding charges under B.I. & B.II.*		
	Area in acres	Number of trees counted.	Per survey party.		Per gauge.		Area in acres.	Average daily outturn by one officer.		Per 100 acres surveyed.	Per 1,000 trees counted.	Per 100 acres surveyed.	Per 1,000 trees counted.	
			Acres.	Trees.	Acres.	Trees.								
									Rs.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Naini Tál...	11,108	460,574	32·5	1,347	10·2	436	19,625	322	4,606	29 15	7 3 6	8 6 1	2 0 4	6 8 4
Ránikhet...	12,120	767,272	42·4	2,683	12·	759	17,089	397	3,963	20 5	3 3 4	5 15 7	0 15 1	8 12 5
Nandaur Valley.	11,143	322,458	37·8	1,093	7·7	222	29,279	585	3,122	19 2	6 9 9	8 10 7	3 1 1	3 6 1
Totals and averages.	34,371	1,550,304	37·2	1,680	9·8	444	65,993	496	11,691	23 0 9	5 1 7	7 11 2	1 11 4	5 8 7

The rates necessarily varied according to the nature of the ground, the density of the crop, and other circumstances.

General remarks.

16. The operations of the Working Plan Branch embraced a larger area than has previously been undertaken in a single year, and extended to forests situated in three separate forest divisions. Several probationers and apprentices were attached for instruction ; of these Babu Chandra Kumar Chatterji (Central Provinces), Ktipa Nath Dey (Assam), and Bhukan (Berar) rendered the best service.

ORDERS OF GOVERNMENT.

No. 109 OF 1883.

RESOLUTION.

REVENUE (FORESTS) DEPARTMENT.

Dated Allahabad, the 2nd February, 1883.

ANNUAL PROGRESS REPORT OF THE ADMINISTRATION OF THE FOREST DEPARTMENT IN THE NORTH-WESTERN PROVINCES AND OUDH FOR THE YEAR ENDING 31st MARCH, 1882.

THE reports of the three Circles, *viz.*, the Central, Oudh, and School Circles, into which the forests of the North-Western Provinces and Oudh are divided, were received by the Press from Conservators on the 26th July, the 8th August, and the 14th August respectively. The printed copies due to Government on the 15th July did not, however, arrive until the 31st October. The Lieutenant-Governor is aware that this was due to the illness of one of the Conservators, but he trusts that next year the reports may be all submitted with punctuality.

2. Mr. Greig was in charge of the Central Circle throughout the year; Captain Wood had charge of the Oudh Circle, and Major Bailey of the School Circle, except from the end of October, 1881, to the 10th May, 1882, when he was officiating as Conservator in the Punjáb, and Major VanSomeren held charge of the School Circle in his place.

It is satisfactory to find that the rules have continued to work well under which the divisional forest officers were placed in direct communication with the chief revenue officer of the district in certain branches of correspondence, and that under this system district officers have given material assistance to the Department.

3. *Area and boundaries.*—The areas under the control of the Forest Department in each Circle at the commencement and close of the year are reported as follows:—

Circle.	On 1st April, 1881.			Area in square miles on 31st March, 1882.			Increase or decrease.
	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.	
Central	1,467	100	1,567	1,467	98	1,565	−2
Oudh	1,079	...	1,079	1,090	...	1,090	+11
School	767	...	767	769	...	769	+ 2
Total ...	3,313	100	3,413	3,326	98	3,424	+11

Besides the above, the Bánda forests were constituted a Forest Division in September, 1881. They have an area of 55,535 acres within the forest line, and 716 acres outside it. It is believed that the 716 acres outside the forest line will soon be exchanged for land within it, and negotiations for the acquirement of a further area of 21,208 acres are proceeding.

The decrease of two square miles, or 1,471 acres, in the area of the protected forests of the Central Circle, is explained to be due to the corrected calculation of the area of the forests of the Naini Tal Division by the Forest Survey Department. In the Oudh Circle additions have been made to the Nawábganj forests of Gonda. The increase of 1,396 acres, in the area of the forests of the School Circle is accounted for by 1,430 acres having been added in Bashahr, while 34 acres, which were erroneously demarcated, have been excluded from Saháranpur.

As regards boundaries, it is satisfactory to learn that considerable progress was made in the Central Circle during the year, where the very little demarcation work now remaining to be done is expected to be completed in the current year. Rs. 2,979 were spent on demarcation work in this Circle. In the Oudh Circle the progress made in boundary works consisted of about two miles demarcated, 101¼ miles of new ditching, 27 miles broad boundary cleared, and 1,509 posts erected. The Conservator states, in reply to the orders on the last Progress Report, that, with the exception of Gorakhpur, the boundaries of all other forests are now laid down with posts or pillars ; within most places connecting trenches have been run between the posts or pillars ; and ditching is being gradually carried on where practicable. The demarcation of the forest lands in Gorakhpur will be carried out in the present season. In the School Circle Rs. 2,539 were spent on boundary works, principally in the erection of new and intermediate pillars, and in clearing old lines. One important boundary question in this Circle is still under the consideration of Government, but this is the only one which still remains unsettled.

The demarcation and maintenance of clear and well-defined boundaries is an essential of good forest administration, and Conservators should push on boundary works to completion as rapidly as possible in all forests where they have not yet been carried out. A note should be made in the annual report of the number of miles in the boundary in which the demarcation is certified to be in good order.

4. *Protection and improvement.*—The results of the prosecutions for breach of forest rules in the year under review and in the preceding year are shown in the following table :—

Circle.		Prosecutions.		Convictions.	
		Number of cases.	Number of persons.	Number of cases.	Number of persons.
Central	1880-81	388	828	336	663
	1881-82	353	734	331	656
Oudh	1880-81	36	59	30	52
	1881-82	71	147	53	126
School	1880-81	43	121	39	109
	1881-82	69	143	50	94
Total	1880-81	467	1,008	405	824
	1881-82	493	1,024	434	876

The large proportion of convictions obtained may be taken as showing that there has usually been some substantial ground for the prosecutions. With reference to the recurrence of a large number of cases in the Central Circle, the Conservator explains, in answer to the remarks made in the review of the reports for the preceding year, that it has hitherto been the custom in this Circle for Divisional Officers to show in the return all fines imposed by them for petty offences without any recorded proceedings, and that, for example, of the 192 cases entered in the Kumaun Division, only 4 were tried magisterially. He is of opinion that only those cases should be shown in Form No. 52 which have actually been tried by an officer with magisterial powers, in which case the number would be very much diminished. The Conservators of the other two Circles will be asked to report their practice in this respect, when definite orders to secure uniformity will issue. It would seem, however, desirable that the two classes of cases should be shown separately.

The offences were mostly of a petty nature, such as unauthorised felling or appropriation of wood or forest produce and grazing without permission; four of the cases were against forest guards for dishonest practices. The Conservator, School Circle, mentions that in the Dehra Dún, Saháranpur, and Jaunsár Divisions, 53 cases were compounded under section 67 of the Forest Act, Rs. 881 being paid in compensation: and similar information from the other Divisions would be of interest.

5. *Construction of communications and buildings.*—The sums expended on the construction of roads, bridges, buildings, wells, &c., were as follows, compared with the sums spent in the preceding year:—

Circle.		Roads and bridges.	Buildings.	Other works.	Total.
		Rs.	Rs.	Rs.	Rs.
Central	1880-81	20,480	6,971	28	27,479
	1881-82	22,040	7,831	358	30,229
Oudh	1880-81	11,966	18,688	3,274	33,928
	1881-82	11,796	21,291	2,972	36,059
School	1880-81	7,254	3,029	35	10,318
	1881-82	7,663	16,439	524	24,626
Total	1880-81	39,700	28,688	3,337	71,725
	1881-82	41,499	45,561	3,854	90,914

In the Central Circle 46 miles of new roadway were made at a cost of Rs. 8,488; Rs. 17,019 were spent in repairing existing roads, and Rs. 781 in repairing fences. Two first class houses were taken in hand, and a rest-house and several forest huts built. In the Oudh Circle 60 miles of new roads were made, and 735 miles of old roads were kept in order, repaired, and improved; five new bridges were made and 38 repaired; 12 new rest-houses were completed during the year and 6 are in progress; 19 new masonry wells were completed, 6 are in progress, and 44 wells have been cleared out. The excellent system of roadways and the provision of wells in the parts of these forests not traversed by running streams have been noticed with marked approval by the Inspector-General. In the School Circle 82 miles of new roads and paths were constructed in the Dún and Jaunsár Divisions, and the necessary repairs were

executed throughout the Circle. The buildings of the Forest School at Dehra were completed, a new rest-house was built, and several outhouses put up for the use of Forest Officers and their subordinates. On the whole, satisfactory progress seems to have been made in all three Circles. In future reports the length of the communications kept up might be shown, as has been done by the Conservator of the School Circle, specifying any additions made during the year, and whether they have had the necessary repairs and are in good order. The same information should also be given for the more important buildings belonging to the Department.

6. *Reproductive measures.—Plantations.*—The area covered by plantations was:—

	On 1st April, 1881.	On 31st March, 1882.	Increase or decrease.
	Acres.	Acres.	Acres.
Central Circle ...	1,047	1,178	+131
Oudh Circle ...	563	791	+228
School Circle ...	1,201	1,361	+160

and the amount expended was—

	1880-81.	1881-82.
	Rs.	Rs.
Central Circle	18,322	21,961
Oudh Circle	7,317	9,459
School Circle	18,298	20,414

In the Central Circle 131 acres were added in the Naini Tal and Jhánsi Divisions at a cost of Rs. 3,639; in the Oudh Circle 228 acres were added in the Bahraich and Gorakhpur Divisions at a cost of Rs. 2,142; and in the School Circle 160 acres were added at a cost of Rs 2,839.

This is a matter of such importance that the Lieutenant-Governor would wish it to be more closely reported upon in the accounts which the Conservators yearly give of their charges. Artificial plantation is not everywhere required. Many of the forests, especially the sál forests, which comprise the greater portion of the area under the control of the Department in this province, are, it is believed, steadily reproducing themselves, wherever there is protection from fire and grazing. But there are tracts in which, it appears from Mr. Greig's report, that assistance by irrigation may be needed; and the Inspector-General in his recent notes on the Kumaun Division remarked the more generous growth of the seedlings on the southern faces of the hills, and suggested special treatment in the fellings of mature timber on the northern slopes. With sissu, again, the case seems to be different. It will not reproduce itself, except on entirely new ground, without artificial help. The patient and thoughtful experiments of Captain Wood have thrown much light on the conditions required for the successful reproduction of this tree, and the results seem conclusively to show that this can only be achieved at the cost of a labour and outlay which, in the present state of the market, will probably be prohibitive of the plantation of it on any considerable scale. Other trees, however, may be found more hardy in the early struggle for existence, and experiments should be continued with the careful supervision under which alone they will yield inferences of value. Whether artificial plantation is needed in a division,

and if so, what form it should take, is a matter in which the Government must mainly depend upon the professional advice of the Forest Officers. But it would be of the highest interest that their reports should give some information as to the progress of reproduction in the forests coming under the operations of their Department. The subject will be returned to later on.

The Ránikhet nursery under Mr. Craw did good work during the year, and distributed upwards of 13,000 forest trees to the Conservator and the Cantonment Magistrate, and 6,000 fruit trees to the villagers of the neighbouring hills. There is a stock, however, remaining of nearly 400,000 forest trees and 100,000 fruit trees, and endeavour should be made more fully to utilise this very large reserve.

The Circle reports are confined for the most part to an account of the plantations of the year—sometimes successful, sometimes failures; but it is desirable they should state the condition of the older plantations. It is interesting, and may be useful in its bearing on further undertakings of the same sort, to know how far these have succeeded.

7. *Working plans.*—The Conservator, Central Circle, reports that annual plans of operations for the working of the forests were issued to Divisional Officers as usual, the system having been in force since 1878-79. An abstract of the plan for the year might with advantage be appended to each Divisional report. It would serve to illustrate the nature of the work carried on in each Division, and show how far the programme laid down had been carried out. Captain Wood says that the system of sending in an annual plan of operations has been in force during the year, though the information required to draw up a preliminary working plan in the form ordered by the Government of India is very far from complete. The Conservator, School Circle, reports that annual plans of operations were drawn up for the guidance of the Divisional Officers, and were found most useful. A separate memorandum on the work accomplished by the Working Plan Division is appended to his report. From the 1st April to the 5th July the officers of that Division were employed at Naini Tal in the enumeration, survey, and examination of the protected forests extending over 19,000 acres. Till the 21st September they were at Mussooree, engaged in working up the data collected in the field and taking out areas. On the 22nd September they left for Ránikhet, where they were employed till the 7th December in the examination and description of the Ránikhet reserve. Till the 5th February the work lay in the Nandaur valley; and from the latter date till the end of the financial year the Working Plan Division was again employed at Naini Tal, principally in experimental fellings, to ascertain the quantity of standing stock and the rate of growth.

The work done in all three localities is summarised as follows:—

Enumeration work was carried out in 34,371 acres and 1,550,304 trees counted and classified. The examination and description of plots extended over 65,993 acres. The total cost, including all charges, was Rs. 11,691; and the average cost of enumeration work per 100 acres surveyed was Rs. 23; per 1,000 trees counted, Rs. 5; and for examination and description of plots, Rs. 5-8-0 per 100 acres. The information

collected, if properly utilised, should prove of the greatest value for the future administration of the forests.

8. *Fire conservancy operations.*—The area in which protection from fire was attempted, that in which it failed, that successfully protected, and the total cost of protection up to 30th June, 1882, were as follows, the figures for 1880-81 being also given:—

Circle.		Area attempted to be protected.	Failure.	Actually protected.	Cost.
		Acres.	Acres.	Acres.	Rs.
Central	1880-81	215,558	11,345	204,213	60,836
	1881-82	256,809	17,221	239,588	77,200
Oudh	1880-81	178,619	4,865	173,754	30,546
	1881-82	182,190	32,660	149,530	39,712
School	1880-81	113,639	988	112,651	25,569
	1881-82	141,854	5,661	136,193	33,162
Total	1880-81	507,816	17,198	490,618	1,16,951
	1881-82	580,853	55,542	525,311	1,50,074

There was thus considerable increased activity in fire conservancy, the area attempted to be protected having risen from 507,816 acres to 580,853 acres; that successfully protected from 490,618 acres to 525,311 acres, and the expenditure from Rs. 1,16,951 to Rs. 1,50,074. The Conservator, Central Circle, has given full details of all fires which occurred and the causes which led to them. Out of 22 fires, two, by which 40 acres were burnt, were apparently lighted intentionally; 13, by which 4,729 acres were burnt, either were accidental or the origin was not known; four, and the most destructive of all, burning 12,151 acres, were from fires which crossed the outer fire-lines from outside jungles; and three, burning 301 acres, were fires which spread from lime-burning or fence-making. Fires of the last two classes ought all with proper care to be avoided. As the season was generally very unfavourable for fire conservancy, owing to the want of rain, it is probable that these accidents were to be expected; but the Lieutenant-Governor trusts that Forest Officers of all grades will do their utmost to make protection as effective as possible.

9. *Yield and working.*—The summaries of Forms Nos. 58-65, in which are shown the yield of the forests during the year and the manner in which the timber and other produce have been disposed of, differ so widely in each report that it is almost impossible to tabulate the information given for all three Circles on any uniform plan.

In the Central Circle 26,064 trees were cut by departmental agency, of which 2,534 were sál, 3,253 sein, and 3,105 chír.

These were classified as follows:—

First class, above 6 feet in girth		...	...	4,200
Second class,	4½ feet to 6 feet	...	...	3,861
Third class,	1½ feet to 4½ feet	...	...	9,186
Fourth class, below 1½ feet		...	...	8,817
and the total contents are reported as		...	...	427,563 c. ft.

The Conservator has, however, omitted to make any comparison with the total yield of the Circle in former years, although this was specially

noticed in the orders on the last report, and his attention is again drawn to the subject.

In the Oudh Circle 3,160 trees were felled, with an estimated cubic content of 146,204 feet. All these trees were over six feet in girth. With the approval of the Inspector-General of Forests the number of sál trees felled was increased from 2,000 to 2,500.

In the School Circle the number of trees felled was 2,261, and the cubic contents were estimated at 157,692 feet. Of these trees 2,163 were over 4 feet 6 inches in girth. The number of trees felled in the previous year was 2,114, and their cubic contents 117,490 feet. The Conservator has explained the causes of increase or decrease in the fellings of each Division.

Major Bailey considers the estimate of cubic contents to be of extremely doubtful value—a remark to which these figures certainly give some colour—and suggests that it would be sufficient to trust to the record of girths only. Some uniform and well-understood system of estimating is plainly required. The cubic contents of a tree range from 16 feet in the Central Forests to 69 in the School Forests. If this is due, as Major Bailey suggests, to a difference in the system of measurement, the small wood being included in one Circle, but excluded in another, a common method must be arranged. But the discrepancy appears to be mainly due to the circumstance that in the Central Circle one-third of all the trees felled by the departmental staff were of miscellaneous sorts of the smallest size for a special purpose in the Ganges Division, whereas the fellings in the other Circles were limited to trees of the better timber. The estimate of cubic contents should, however, be continued as a rough index to the quantity of timber obtained and to the work of the wood-cutting staff. It is probably more approximate than any calculation that can be made from the average girth.

10. Setting aside selection fellings, it is not easy to gather clearly from the reports themselves what the yield of timber and other forest produce of all kinds during the year actually amounted to. The outturn of timber and other produce cut and collected by Government agency is shown in Form No. 59; and in Form No. 63 is shown the timber and other produce cut, collected, and removed from the forests by consumers or purchasers, including the receipts from grazing dues; but the total yield of timber for the year cut by departmental agency, or by purchasers or consumers, or given gratis to villagers, is nowhere expressly stated, except by the Conservator, Oudh Circle, who puts the gross outturn of wood, including firewood and charcoal, for his Circle at 1,500,000 cubic feet, or 3 cubic feet per acre, less than a tithe of what his forests will, as he believes, eventually yield. In the Central Circle only eight sál trees and one dhauri tree are shown as clearance fellings by departmental agency; while under thinnings are shown 3,948 kiras of various kinds of trees, and 301,507 kurias, which are presumably saplings of sorts. There were given to villagers with forest rights and others 3,813 entire trees and upwards of 20,000 poles and pieces: 1,855 sál trees and 5,720 of other sorts were also felled and removed by purchasers; but the

cubical value of this timber is traced with difficulty, and the results of a laborious exploration of statement No. 63 are affected by doubts as to whether it does not include fellings of a previous year.

No information of this kind has been given for the School Circle.

11. The outturn of timber and other produce cut and collected by Government agency during the year is given for each Circle as below:—

		Central Circle.	Oudh Circle.	School Circle.
Sál logs (in cubic feet)	...	26,179	156,320	...
Sál sleepers ...	...	...	6,439	...
Deodar logs ...	...	...	...	5,576
Deodar sleepers ...	...	51,353	...	222,107
Chír logs ...	...	22,067	...	...
Total timber outturn ...	...	281,469	183,455	252,102

A comparison of the outturn of minor produce is difficult, for the character of these assets varies in the different Circles. Hides appear in the returns of one Circle, canoes in those of another. But even in so important an item as firewood the outturn is given in maunds in one Circle, in cubic feet in another, and is wholly omitted from the third.

12. The timber received from forests in sale depôts during the year was as follows:—

				Cubic feet.
Central Circle	...	...	...	175,300
Oudh Circle	...	...	...	148,722
School Circle	...	...	...	73,531

Details of this timber and of the forest produce collected at the depôts are given in the reports of the Conservators.

13. The annual timber account then shows the following sales of wood :—

		Central Circle.	Oudh Circle.	School Circle.
Sold from depôt, cubic feet	...	132,693	121,161	67,327
Sold locally, ditto	...	46,432	7,085	9,051

14. From these data should appear an account of the timber and other produce for disposal which had been cut or collected by departmental agency during the year in each Circle. The Conservator, Oudh Circle, has given an excellent abstract for both the year under report and the preceding year, and some similar synopsis is needed for each Circle under the main heads of assets. A comparison between the three is attempted in the following table for timber of all kinds :—

		Central Circle.	Oudh Circle.	School Circle.
In hand ...	...	59,001	558,413	19,930
Brought on the books	...	223,972	335,425	82,582
Total	...	282,973	893,838	102,512
Removed by purchasers	...	132,693	72,961	76,378
Otherwise disposed of	...	49,809	277,528	4,880
Balance	...	100,471	543,349	21,254

A comparison of the produce, sales, and stock of the valuable item of firewood is, for reasons which have been already given, unfortunately impossible.

15. Passing on to the details of timber and other produce cut and removed from the forests by private purchasers or consumers, the amount of revenue thereon, including fees from grazing dues, is shown below for each Circle:—

Description.	Central Circle.		Oudh Circle.		School Circle.	
		Rs.		Rs.		Rs.
Timber, cubic feet ...	539,092	1,81,072	332,327	99,138	55,810	53,980
Firewood, maunds ...	168,486	9,798	235,815	16,928	...	8,054
Bamboos, scores ...	976,714	78,855	8	8	35,062	9,007
Grazing dues ...	...	21,418	...	33,958	...	25,132
Minor produce ...	...	29,375	...	37,420	...	11,684
Total revenue due ...		3,20,518		2,08,293		1,08,324
Total revenue realised ...		3,19,203		1,81,845		1,05,355

It is explained that the figures for the School Circle do not represent the whole of the sales corresponding to the revenue, because the amounts under farming leases cannot at present be given, and there are other instances in which the quantities cannot be stated. Free grants of produce are also not included. The system of granting farming leases for the collection of revenue, principally on dead timber, firewood, bamboos, and minor produce, was continued, and found generally to lead to satisfactory results. Forty-one such leases were given at an aggregate total of Rs. 22,358.

16. The value of the timber and other produce on hand at the commencement and close of the year, and also of the live and dead stock, is shown in the following statement :—

Description.	On hand at commencement of year.						On hand at close of year.						Increase or decrease in value.		
	Central Circle.		Oudh Circle.		School Circle.		Central Circle.		Oudh Circle.		School Circle.				
	Cubic feet.	Value.	Cubic feet.	Value.	Cubic feet.	Value.	Cubic feet.	Value.	Cubic feet.	Value.	Cubic feet.	Value.	Central Circle.	Oudh Circle.	School Circle.
		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	Rs.	Rs.	Rs.
Timber ...	64,145	58,258	519,005	2,79,449	19,930	18,117	100,517	93,453	562,441	2,83,324	199,865	1,17,294	+35,195	+ 4,875	+ 99,177
Firewood and charcoal ...	...	8,076	...	916	...	5,048	...	8,782	...	69	...	3,670	+ 706	— 847	— 1,378
Live stock ...	...	14,483	...	22,230	...	6,800	...	15,023	...	13,985	...	6,800	+ 540	— 8,245	...
Dead stock, including buildings and furniture ...	...	73,949	...	1,56,855	...	59,849	...	78,954	...	1,80,255	...	73,739	+ 5,005	+23,400	+ 13,890
Total ...	...	154,766	...	4,59,450	...	89,814	...	1,96,212	...	4,77,633	...	2,01,503	+41,446	+19,183	+ 1,11,689

Major Bailey offers some just remarks on the value of this statement. It is misleading, because it is partly compiled, as regards the timber account, from figures that do not represent final payment, and because the estimates of the value of stock must be always more or less conjectural. A stock account it is no doubt necessary for many reasons to keep, and one of its several objects is fulfilled, when it shows a felling of timber in excess of the public wants; but for all the purposes of an administration report it should suffice to show the amount of stock under a few broad headings, such as those in the table above. There are discrepancies between this table, compiled from statement No. 65, and that given in para. 14 from statement No. 62, which Conservators should have been careful to explain.

17. These returns show considerable variations, not only between the several Circles in the method of preparation, but for the same Circle from the data of the previous year. The explanation of these latter variations is seldom given, but is requisite for any fair criticism of the forest management: and this leads the Lieutenant-Governor to remark that it is very necessary that the details given in the Divisional reports should be prefaced by some such general account of the forests with which they deal, as that which Major Bailey has given this year. It may with advantage go, where possible, into other particulars, always avoiding minute details and giving condensed statements of facts or figures. In this way it may be practicable, without adding materially to the length of the report, to show with sufficient accuracy the approximate area under the principal kinds of trees, the area covered by mature or growing trees, the area over which fellings of mature trees have been made and clearances and thinnings effected, and the area in which reproductive measures are in progress and in which timber operations have been brought to a close. In their summaries the Conservators should clearly but concisely bring out the total yield of the forests of their Circles during the year under report under timber and other forest produce. Timber fellings should be shown under selection, clearance, and thinning fellings; but the total of all timber felled, whether by departmental agency or by private purchasers, or given to villagers and others, should be specified. The same should also be done with regard to all other forest produce under some general headings, and lastly the total yield for the year should be compared with that of the previous year. It should next be shown how the yield of the year has been disposed of. It would appear that timber and other forest produce is dealt with (1) by departmental agency, (2) by private purchasers or contractors, (3) by villagers and others having free rights; and that it is disposed of (1) by being brought to depôts or sold locally, while under (2) and (3) it is removed by purchasers or consumers, and the Department has no further concern with it. In reviewing the transactions of the year under each of the above heads, the causes of any material differences from the figures of the previous year should be explained. For instance, any increase or decrease in the fellings of mature timber, whether by departmental agency or otherwise, should be specially noticed, as also the causes of increase or decrease under any particular head of forest produce. The causes which have affected the sales of timber and forest produce, the markets supplied, and the prospects of the further development of trade, should be noticed. A considerable amount of information on these points has been given in the present reports, more particularly in the reports of Mr. Greig on the details of his divisions; but the transactions and the general working results of the Circle as a whole can often only be ascertained with very great difficulty, if at all; and unless these salient points are properly brought up by methodical tabulation and comparison, the Government can take no distinct or comprehensive survey of the annual management of its forests, or, indeed, do proper justice to the conscientious labours of its Forest Officers. A separate communication will be addressed to Conservators on the subject of the summaries to be given for each Circle, and the system to be pursued in the compilation of their returns.

18. *Financial results.*—The financial results of the year under receipts and expenditure compare as follows with those for the two preceding years:—

Circle.	Receipts.			Expenditure.			Surplus.		
	1879-80.	1880-81.	1881-82.	1879-80.	1880-81.	1881-82.	1879-80.	1880-81.	1881-82.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central ...	3,67,601	4,57,607	5,04,037	2,32,234	2,62,437	3,04,893	1,35,367	1,95,170	1,99,144
Oudh ...	3,84,923	2,81,980	3,11,145	2,45,547	2,17,036	2,24,506	1,39,376	64,944	86,639
School ...	2,87,442	2,02,642	2,50,911	2,38,813	2,00,101	3,86,813	48,629	2,541	—1,35,902
Total ...	10,39,966	9,42,229	10,66,093	7,16,594	6,79,574	9,16,212	3,23,372	2,62,655	1,49,881

19. The receipts were derived from the following sources:—

Circle.	Timber and other produce removed from the forests by Government agency.		Timber and other produce removed from the forests by consumers or purchasers.		Confiscated drift and waif wood.		Miscellaneous.		Total.	
	1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central ...	1,97,064	1,77,829	2,56,540	3,19,202	2,051	2,145	1,952	4,758	4,57,607	5,04,037
Oudh ...	1,21,170	1,22,303	1,54,806	1,81,846	3,414	4,314	2,590	2,682	2,81,980	3,11,145
School ...	1,22,124	1,28,951	78,831	1,05,355	1,177	5,125	510	5,959	2,02,642	2,50,911
Total ...	4,40,358	4,29,083	4,90,177	6,06,403	6,642	11,584	5,052	13,399	9,42,229	10,66,093

20. The following tables show the expenditure under the two main heads—A., Conservancy and Works, and B., Establishments:—

A.

Circle.		Timber and other produce removed from the forests by Government agency.	Timber and other produce removed from the forests by consumers or purchasers.	Confiscated drift and waif wood.	Rent of leased forests.	Live stock, stores, &c.	Communications and buildings.	Demarcations, improvements, &c.	Miscellaneous.	Total.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central ...	1880-81 ...	77,955	17,243	537	4,000	6,329	27,480	25,722	1,078	1,60,344
	1881-82 ...	91,978	17,295	202	4,997	11,566	30,230	37,550	2,993	1,96,812
Oudh ...	1880-81 ...	71,263	6,687	172	...	8,245	33,928	14,648	656	1,35,599
	1881-82 ...	68,869	8,683	438	...	7,047	36,059	18,401	1,250	1,40,747
School ...	1880-81 ...	80,196	4,812	11	8,501	4,425	10,318	8,835	2,376	1,19,474
	1881-82 ...	2,27,587	5,703	220	8,501	9,644	24,626	15,726	10,458	3,02,465
Total ...	1880-81 ...	2,29,414	28,742	720	12,501	18,999	71,726	49,205	4,110	4,15,417
	1881-82 ...	3,88,434	31,682	860	13,498	28,257	90,915	71,677	14,693	6,40,024

B.

Circle.	I. Salaries.		II. Travelling allowances.		III. Contingencies.		Total.	
	1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.	1880-81.	1881-82.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central	89,483	93,344	8,620	9,716	3,990	5,021	1,02,093	1,08,081
Oudh	66,104	66,706	11,234	12,675	4,099	4,378	81,437	83,759
School	65,769	69,405	11,580	10,921	3,278	4,022	80,627	84,348
Total ...	2,21,356	2,29,455	31,434	33,312	11,367	13,421	2,64,715	2,76,188

21. The receipts and expenditure under the three great heads—

I.—Departmental timber operations,

II.—Other revenue,

III.—Formation, protection, and improvement of forests,

were as follows ;—

Circle.		*Departmental timber operations.*			*Other revenue.*			Formation, protection, and improvement charges.	Net surplus.
		Receipts.	Charges.	Plus or minus.	Receipts.	Charges.	Surplus.		
		Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.
Central ...	1880-81 ...	1,97,064	1,30,667	+66,397	2,60,542	63,339	1,97,203	68,431	1,95,169
	1881-82 ...	1,77,828	1,49,834	+27,994	3,26,209	64,647	2,61,562	90,412	1,99,144
Oudh ...	1880-81 ...	1,21,170	86,738	+34,432	1,60,810	44,321	1,16,489	85,976	64,945
	1881-82 ...	1,22,951	89,582	+33,369	1,88,194	62,822	1,25,372	72,102	86,639
School ...	1880-81 ...	1,22,123	1,02,887	+19,236	80,519	26,485	54,034	70,729	2,541
	1881-82 ...	1,28,951	2,76,559	—1,47,608	1,21,960	33,809	88,151	76,445	—1,35,902
Total ...	1880-81 ...	4,40,357	3,20,292	+1,20,065	5,01,871	1,34,145	3,67,726	2,25,136	2,62,655
	1881-82 ...	4,29,730	5,15,975	—86,245	6,36,363	1,61,278	4,75,085	2,38,959	1,49,881

22. The aggregate receipts for the three Circles in the year under report were thus Rs. 10,66,093, as compared with Rs. 9,42,229 in 1880-81 and Rs. 10,39,966 in 1879-80. The aggregate expenditure was Rs. 9,16,212, as compared with Rs. 6,79,574 in 1880-81 and Rs. 7,16,594 in 1879-80; and the aggregate net surplus was Rs. 1,49,881, as compared with Rs. 2,62,655 in 1880-81 and Rs. 3,23,372 in 1879-80, the falling off being due to a deficit of Rs. 1,35,902 in the School Circle. There was a small increase of Rs. 1,23,864 in receipts over those for the previous year, but this was far more than counterbalanced by an increase of Rs. 2,36,638 in expenditure, and the net surplus was Rs. 1,12,774 less. The Government of India has on more than one occasion lately drawn attention to the slow development of Forest revenue in these provinces, and the Lieutenant-Governor regrets that the financial results of the year should again appear to be so unfavourable. The gross receipts, however, showed an increase of twelve per cent. over those of the previous year, and the income is the highest that has yet been attained. The smallness of the provincial surplus is entirely owing to the large deficit in the School Circle, which is explained to be due to the purchase of sleepers from Messrs. Winton and Braidwood, to which further reference will presently be made. The regular estimate for the current year anticipates a surplus of Rs. 2,50,000 and the estimate for 1883-84 has been

provisionally sanctioned on figures which provide for a probable surplus of Rs. 3,00,000.

23. In the following table are collected the main facts of the three Circles and their constituent divisions:—

Divisions.	Area in acres.	Yield of timber, cubic feet.	Kind of timber.	Yield of timber per acre in cubic feet.	Total receipts.	Receipts per acre.	Total expenditure.	Expenditure per acre.	Total surplus or deficit.	Ratio of expenditure to receipts.	Surplus per acre.
					Rs.		Rs.		Rs.	Rs.	
Naini Tal ...	22,937	109,580	Chír and oak ...	4·8	33,283	1·4	38,164	1·7	− 4,881	115	...
Ránikhet ...	42,654	136,462	Chír ...	3·2	45,766	1·1	38,349	·9	+ 4,414	83	·2
Kumaun ...	406,930	430,934	Sál and sain ..	1·1	194,239	·5	87,294	·2	+ 1,06,945	45	·3
Garhwál ...	302,536	174,944	Sál ...	·6	119,484	·4	56,468	·2	+ 63,016	47	·2
Ganges ...	111,442	213,514	Deodar and sál ...	1·9	82,668	·7	39,726	·3	+ 42,942	52	·4
Jhánsi ...	23,613	304	Kardahi and teak,	...	4,860	·2	2,966	·1	+ 1,894	61	·1
Lalitpur ...	95,573	878	Shej and bel ...	...	11,006	·1	4,728	·05	+ 6,278	43	·05
Bánda ...	75,459	...	...	...	6,744	·1	12,616	·2	− 5,872	187	...
Direction ...	...	...	...	...	...	...	22,233	...	...	...	...
Central Circle,	1,081,144	1,066,636	...	1·0	498,050	·46	3,02,535	·28	+ 1,95,515	61	·18
Pilibhít ...	87,680	...	...	...	8,879	·1	12,585	·1	− 3,706	142	...
Bhira (sub-dn.)	104,960	...	...	...	6,408	·05	19,197	·1	− 12,789	300	..
Kheri ...	168,320	234,962	Sál ...	1·4	154,501	1·0	1,17,828	·7	+ 36,673	·76	·3
Bahraich ...	164,480	117,825	Sál ...	·7	60,337	·4	27,947	·2	+ 32,390	46	·2
Gonda ...	91,520	50,000	Sál, &c. ...	·5	21,117	·2	10,233	·1	+ 10,885	48	·1
Gorakhpur ...	73,600	101,200	Sál and asena ...	1·4	59,901	·8	18,553	·2	+ 41,348	31	·6
Oudh Circle ...	690,560	503,987	...	·73	3,11,145	·45	2,24,506	·33	+ 86,639	72	·12
Dehra Dún ...	177,779	Details not available ...			64,068	·4	31,488	·2	+ 32,580	49	·2
Saháranpur ...	190,696				38,236	·3	15,188	·1	+ 23,048	39	·1
Jaunsár ...	76,740				44,682	·6	51,035	·7	− 6,353	108	...
Tons ...	45,869				1,03,750	2·2	2,25,490	4·9	− 1,21,740	217	...
Direction ...	...				175	...	63,610	...	− 63,435	...	...
School Circle...	491,084	...	...	...	2,50,911	·51	3,86,813	·79	− 1,35,900	154	...

The Central Circle is the largest, it is the most productive of timber, it has the lowest expenditure per acre, and it has the highest surplus. These figures, however, show such singular differences between adjoining Divisions that it is impossible to judge of their administration except in detail. A concise review of each Division is therefore attempted from the data in the report and its appendices, and the report published by the Inspector-General of his recent tour through the forests of the Tarái.

24. *Naini Tal Division.*—These forests yielded upwards of 100,000 cubic feet of timber, principally chír, in selection fellings by departmental agency. Village right-holders cut 5,516 cubic feet of miscellaneous timber, and 5,479 cubic feet were cut and removed by private purchasers. The revenue obtained was Rs. 2,500 less than in the previous year, and the decrease is attributed to the diminished sale of wood-tickets at the

Naini Tal settlement. Till 1880 trees were sold standing in the forest to charcoal-burners. The charcoal is now made by a staff under the Forest Officer and stored in depôts. The Conservator shows a considerable surplus on the transactions, but no comparison is made with the revenue under the preceding system. The stock on the books in this Division seems large.

25. *Ránikhet Division.*—The forests here are also chír and yielded 136,462 cubic feet, of which nearly half was cut under village rights. The Department undertakes no wood-cutting here, and the great bulk of the receipts were from firewood and charcoal. The receipts increased by Rs. 9,000, but the expenditure increased by Rs. 6,500, and of this no explanation is furnished. The plantation work of this Division included some successful sowing of chír seed broadcast.

26. *Kumaun Division.*—Here three-fourths of the timber outturn was from sale of fallen or dry timber, one-third of it sál, the rest khair and haldu. A large income was obtained from bamboos and minor produce, and the revenue rose from Rs. 1,85,371 to Rs. 1,94,239. There is reason to believe from Dr. Brandis' recent report that the revenue in this Division may be materially increased by the commencement of sál cuttings, but expenditure must be watched. It has risen remarkably, and the details of the additional charges are not explained. On the plantations this year no sowings were made, and the young growth of sál struggled with difficulty through the drought of the season.

27. *Garhwál.*—The forests of this Division are sál. Wood was largely cut according to the working plan by purchasers, but the gross revenue was somewhat smaller than in 1880-81, apparently from the large sale of the drift-wood given by the floods of that year. The cuttings in these forests must, in the Inspector-General's opinion, for the present be limited, but he speaks of large areas as full of vigorous young trees. The experiment of selling trees standing, instead of sawing them up and bringing the timber to depôt for sale, is described by Mr. Greig as so successful that it was carried out on a much larger scale. As the expenses of the Division nevertheless increased, the economy is not apparent on the surface; and this is an illustration of one of the matters in which Conservators could with advantage give greatly more detail. The forests of this Circle give a handsome profit, but changes in the system of management should have their reasons and results fully described.

28. *Ganges Division.*—In this Division the fellings were principally done by the departmental staff, and consisted mainly of deodar and sain. The income was 30 per cent. higher than in the previous year; and from the smallness of the stock in hand, there seems to have been a very brisk demand. Bamboos brought in a large revenue. The sál forests have, under the instructions of Dr. Brandis, to be in the meanwhile carefully husbanded. It does not follow that the methods which suit one Division will suit another, and there are distinct advantages in a variety of system; but it would have been interesting had the Conservator given the details which lead to success in departmental fellings in

one forest, but have suggested their discontinuance in its neighbour. The reasons are without doubt good, but they are not given.

29. *Jhánsi, Lalitpur, and Bánda Divisions.*—It is not stated what wood prevails in these forests, but it can scarcely be said that they have yet commenced to yield. Half of the income in Bánda was from grazing dues; in Lalitpur, the main item of revenue was from bamboos; and in Bánda a large part of the receipts was obtained from the cultivated land which is still within the line. The District Officers who have charge of these Divisions should give next year a descriptive account of the forests and of the measures taken for their protection and reproduction. In all three there has been a considerable increase of revenue.

30. *Pilibhít Division.*—This consists of forests for the most part of stunted sál, for the revival of which the Conservator has made some interesting experiments. Apparently no cuttings have been made, and the only receipts from timber were from drift wood. Three-fourths of the income were from firewood and charcoal: there was a slight decrease in sales. It will be some time yet before this forest can pay its way.

31. *Bhira Sub-division.*—This block consists of a series of resumed waste-land grants, which have not been long under forest management, and for the present only dead and unreserved trees are being removed. The area is described as covered with well-grown sál poles, but no cutting or thinning will be advisable for many years to come. The greater portion of the revenue was from grazing dues. The income was considerably lower than in the previous year.

32. *Kheri Division.*—These are forests of sál, in which the cutting is mainly done by men on the forest staff. Revenue was stationary, and expenditure made a nominal increase. There was, however, a large outturn of timber, and the Inspector-General has sanctioned a material addition to the fellings of sound timber. The tract contains a large quantity of crooked timber, for which there had been hitherto no market; but the Conservator has secured a contract for sleepers which should greatly raise the revenue of this Division. Grass lands occupy nearly a fourth of the whole area, and the grazing dues brought in upwards of Rs. 10,000. There is, however, much risk from fire from these interlacing prairies, and fire protection was not so successful last year as was to be desired.

33. *Bahraich Division.*—These forests comprise some of the finest young sál wood in the province; but on the advice of Dr. Brandis no cuttings will be commenced for some time, except in Bhinga, and within narrow limits in Motipur. The timber income was almost entirely from dead and dry sál, but there was also a very large sale of firewood and charcoal, and the revenue of this tract should rapidly improve.

34. *Gonda Division.*—This forest was formed, like that of Bhira, out of a number of resumed grants, and contains little but young though promising timber. The principal source of revenue was from dry wood. The falling off in receipts was mainly nominal, as a large sum was paid in the year preceding by the Mahárája of Balrámpur for arrears of grazing fees due from him.

35. *Gorakhpur Division.*—No wood of the reserved kinds is as yet being taken from this tract, but it yields an enormous supply of fire-wood and charcoal, and the surplus was the largest in the Circle, though the Division is the smallest. The Conservator gives just credit to the Forest Officer, Mr. Campbell.

36. *Dehra Dún Division.*—Departmental timber operations have practically ceased. There are few mature trees left, but there is a large quantity of timber in the shape of injured and misshapen trees, which are being cleared by timber merchants under agreement. The revenue from dead timber, bamboos, and minor produce has been leased in several tracts. The Conservator does not, however, compare the results of the two systems. It is a question partly of income, partly of expenditure. Timber brought Rs. 31,535 in 1880-81, Rs. 36,493 in 1881-82 : charcoal, bamboos, and minor produce fetched Rs. 14,462 in 1880-81, Rs. 13,858 in 1881-82. There was thus apparently some small loss in receipts from the adoption of the plan of leasing the collection of the dues on minor produce. This, however, was much more than balanced by a decrease in charges for establishment from Rs. 18,083 to Rs. 15,167, and the surplus for the Division rose from Rs. 23,700 to Rs. 32,580. The Conservator describes the new arrangements as popular, and the revenue is rapidly increasing.

37. *Saháranpur Division.*—These forests are on the southern slopes of the Siwalik hills, which are very thinly and unevenly stocked with trees, and those below the hills have been very much overworked. Present engagements with contractors have been met, but revenue from green timber will now almost cease for some time. The greater portion of the revenues from minor produce was, as in Dehra Dún, farmed out. There was a large increase in the receipts, combined with a diminution of charges, and the surplus for the Division rose from Rs. 8,974 to Rs. 23,048.

38. *Jaunsár Division.*—The produce of this tract is almost entirely taken by the Department of Public Works and Commissariat at Chakráta, and the revenue fluctuates with the strength of the garrison and the consequent demand of the cantonments. Receipts rose from Rs. 30,569 to Rs. 44,682, but charges rose from Rs. 38,037 to Rs. 51,035, and there was a deficit of Rs. 6,353. It is explained that this was due in the main to the three following items : an additional charge of Rs. 4,244 for the departmental fuel works and of Rs. 2,446 on roads and buildings, an expenditure of Rs. 1,753 on plantations, and a charge of Rs. 4,129 for a consignment of box-wood to England. The outlay on box-wood and plantations will probably be reproductive, and that on roads and buildings may not be again required. The charcoal undertaking cleared 50 per cent. It is difficult to say that retrenchment would have been advisable, and it can only be hoped that, with the disappearance of exceptional charges, this year may at last see a surplus in this Division.

39. *Tons Division.*—In this occurred the deficit which has affected the entire Circle. The principal work in it for many years has been the export of deodar sleepers to the State Railways. In addition to its ordinary

stock, the Department purchased from Messrs. Winton and Braidwood 165,552 cubic feet of deodar wood, and the price given was apparently Rs. 200,586. The circumstances under which this arrangement was made have not been detailed, but the bargain was not immediately successful. Selection fellings brought on the stock book 63,895 cubic feet in addition, and not more than 65,748 were sold during the year. The price received on sale was Re. 1-6-0 per cubic foot; the price paid to Messrs. Winton and Braidwood was apparently Re. 1-3-0, and the purchase may yet turn out a remunerative one; but the Conservator mentions the ominous fact that the railway authorities prefer to obtain their supplies from private sources, and it may yet be necessary to reduce the prices. In other respects there is nothing to remark. The revenue increased by Rs. 13,700, and the additions in expenditure were chiefly due to the promotion of the superior officers of the Division.

40. But for this purchase, and the stock of somewhat doubtful value it has placed on the Conservator's hands, the charges of the School Circle would have been less than in any previous year; it would have shown a surplus of Rs. 64,684, and the net revenue of the forests would have exceeded 3½ lakhs of rupees, and yielded 49 per cent. on the expenditure of the year.

41. The outstandings and liabilities on account of contractors and disbursers are shown in the following table :—

Circle.	*Department debtor.*			*Department creditor.*			*Balance due.*	
	At commencement of year.	Recoveries in cash, &c.	At close of year.	At commencement of year.	Payments made during the year.	At close of year.	To department outstandings.	By department liabilities.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Central ...	1,294	63,067	64,361	7,506	63,944	71,450	10,811	372
Oudh ...	105	2,40,133	2,40,238	25,036	2,51,144	2,76,180	36,047	1,052
School ...	...	2,00,233	2,00,233	1,01,697	1,10,455	2,12,152	11,919	...

The revenue received and outstandings on account of revenue were as follows :—

Description.		Outstandings at commencement of the year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to department at close of year.
		Rs.	Rs.	Rs.	Rs.	Rs.
Central Circle,	Timber sales, grazing dues, minor produce, &c.	656	5,05,852	5,06,508	5,04,037	2,471
Oudh Circle ...	Ditto ditto ...	34,996	3,11,099	3,46,095	3,14,378	31,717
School Circle ...	Ditto ditto ...	12,444	2,48,216	2,60,660	2,50,911	9,749

These figures appear to call for no comment, except that the outstandings in the Oudh Circle are still very large, and the attention of the Conservator is drawn to the remarks made in paragraph 26 of the last report, to the effect that if they represent arrears of grazing dues, they should have been long since adjusted or reported on.

42. The work done by the Bahramghát saw-mills is shown in the comparative table below:—

Year.	Value of work done at old rates.	Expenditure.	Surplus.
	Rs.	Rs.	Rs.
1880-81	9,296	8,532	764
1881-82	11,977	8,700	3,277

The cost fell from Rs. 18-15-11 last year to Rs. 15-8-0 in the year under report. The Conservator remarks that great loss is incurred by the numerous sizes of scantlings required by the different officers of the Public Works Department, so that short portions of rejected scantlings cannot be utilised, but have to be re-sawn. He is endeavouring to arrange for a smaller number of standard sizes to be introduced into the public buildings, and if he succeeds, expects to be able to reduce the prices of most of the timber 20 or 25 per cent., with advantage to both parties.

43. *General remarks.*—Rules were framed and issued in accordance with the provisions of section 2, Act XII., 1850, for the taking of security from forest subordinates for public moneys passing through their hands. The rules for defining the relations between Revenue and Forest Officers in force in the Oudh Circle were extended to the whole of the Central Circle and to the Saháranpur Division of the School Circle. Sanction was received from the Secretary of State to the appointment of two European officers, annually for the next three years, from the Survey of India or from the passed students of the Thomason College at Roorkee, as Probationers who will be eligible for promotion to the class of Sub-Assistant Conservator of Forests. The Forest School at Dehra may now be said to have been fairly started, and the first regular course of theoretical instruction was held from the 10th July to the 15th October. The classes were attended by five Probationers and seven Apprentices, five of whom remained as students at the end of the year, and also by six officers of the superior staff from other provinces. The School buildings have been completed, and are said to be in good order; the necessary apparatus has been provided; a library is being formed, and some valuable collections of woods, minerals, and geological specimens have been added. Rules for the admission and training of candidates for the appointment of Forest Rangers have been laid down by the Government of India. The Lieutenant-Governor trusts that the School will now realise the expectations which led to its foundation, and turn out a really efficient staff of Forest Officers, the want of which is so much felt in all Circles. The Conservator of the School Circle states that the principal improvement demanded in his charge is in the establishment of Rangers in all the Divisions, as Foresters are by no means competent to discharge the duties now required of them.

44. In conclusion, the Lieutenant-Governor is gratified to find that the members of the superior staff in all three Circles are almost without exception very favourably reported on by the Conservators, and they merit the acknowledgments of Government for the zeal and efficiency they have shown during the year. The reports of the Conservators them-

selves are in many respects a great improvement on those for former years, though they still leave much to be desired as regards uniformity and systematic arrangement of contents. To all three Conservators the thanks of Government are due for their efficient administration of their Circles.

J. WOODBURN,
Secy. to Govt., N.-W. P. and Oudh,
in the Revenue (Forests) Department.

ORDERED that a copy of the above Resolution (with copy of report) be forwarded to the Conservators of Forests, Central, Oudh, and School Circles, for information and guidance.

Ordered also that copy (with copy of report) be forwarded to the Commissioners of the Meerut, Benares, Jhánsi, Rohilkhand, Allahabad, Kumaun, Sitapur, and Fyzabad Divisions, for information.

Ordered also that copy (with copy of report) be forwarded to the Comptroller-General, Calcutta, for information.

Ordered also that copy (with copy of report) be forwarded to the Inspector-General of Forests, for information.

By order, &c.,
F. BAKER,
Under-Secy. to Govt., N.-W. P. and Oudh,
in the Revenue (Forests) Department.